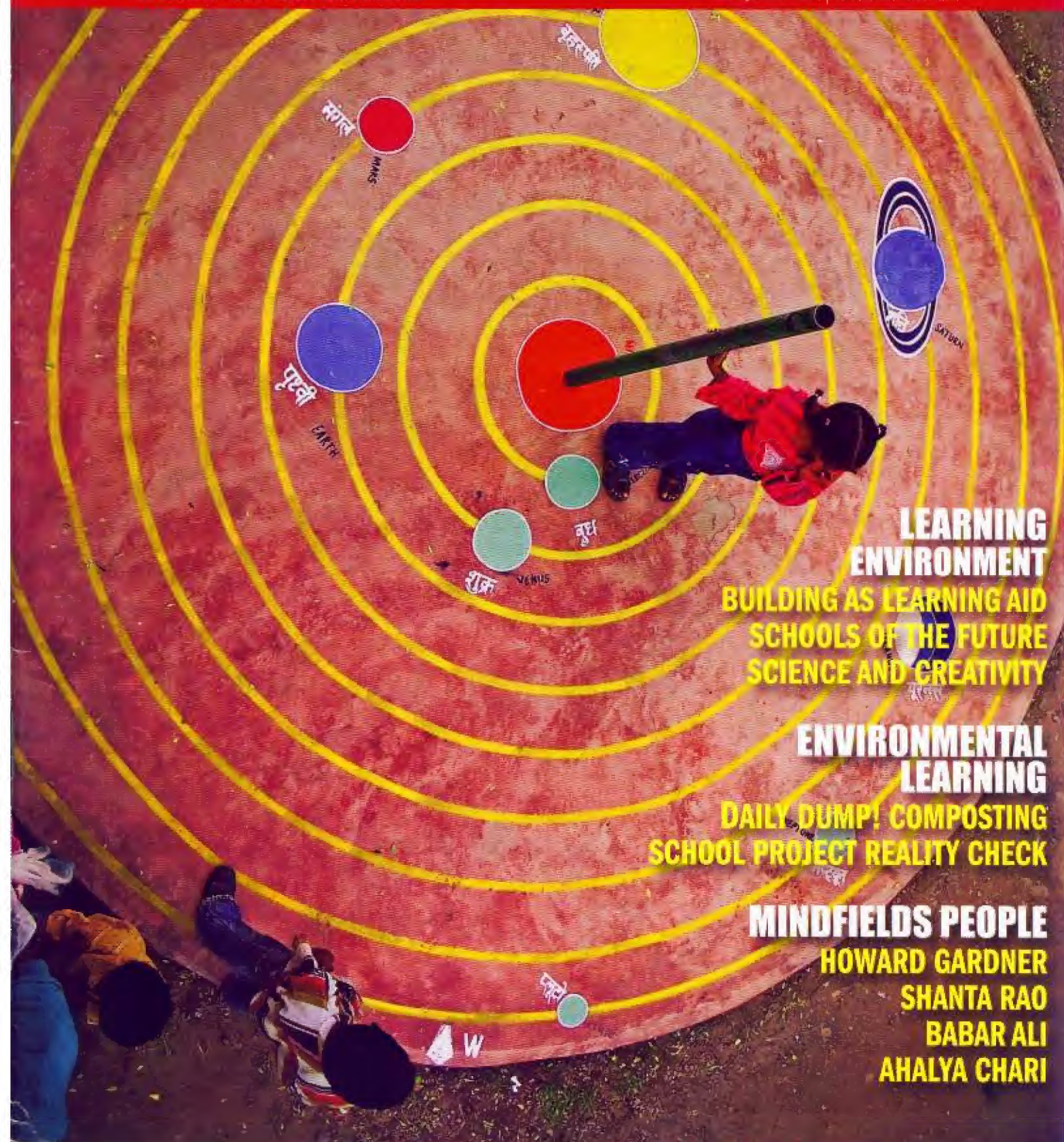


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THE JOURNAL ABOUT IDEAS AND LEARNING

1ST QUARTER 2010 | SUGGESTED PRICE RS 50



## LEARNING ENVIRONMENT

BUILDING AS LEARNING AID  
SCHOOLS OF THE FUTURE  
SCIENCE AND CREATIVITY

## ENVIRONMENTAL LEARNING

DAILY DUMP! COMPOSTING  
SCHOOL PROJECT REALITY CHECK

## MINDFIELDS PEOPLE

HOWARD GARDNER  
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**Publisher**

LUKE HADKIP  
for iDiscoveri Education Pvt Ltd  
Sector 62, (Adjacent to Heritage School)  
Gurgaon 122 003, INDIA  
T 91 124 2855 000  
F 91 124 2855 001



Printed at Pragati Offset Pvt. Ltd.  
17 Red Hills, Hyderabad 500 004  
[www.pragati.com](http://www.pragati.com)

First Quarter 2010



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'Educational' Need not  
Preclude 'Interesting'**MINDFIELDS TEAM**

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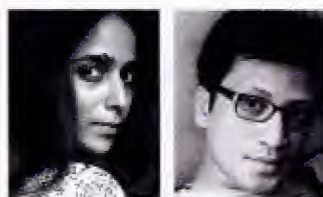
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**INPUTS AND EDITORIAL ASSISTANCE**

Selena George

Photos on Cover and Inside Covers: BaLA

# EDITOR'S NOTE



When Aniruddha Sen Gupta's book, 'Our Toxic World' came to the Mindfields office, it moved us more than we expected. It moved us enough to send us in hot pursuit of Sen Gupta so he'd write the End Note for this issue of Mindfields. Part graphic tale, part instruction book, 'Our Toxic World' (Sage Publishing, Rs. 395) is about the contamination that permeates every aspect of our lives in India, and what we can do as individuals, to combat it. Essential reading, we think. Tying in with this is Hari Batti's piece on why schools' attitude towards the environment is due for a re-haul.

Environment of another kind is what concerns Building as Learning Aid (BaLA) – the physical environment of schools, specifically. BaLA's interventions make state-run school buildings more exciting to interact with. In the process, they create teaching/learning material that's low-cost, durable and accessible – the bane of most non-rich schools is resources being kept under lock and key.

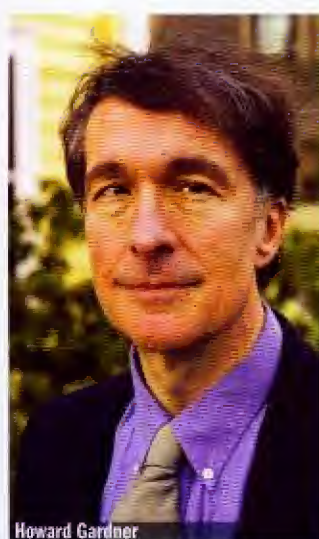
In Wordly Wise, Howard Gardner's thoughts about schools of the future; and about how learning ought to be customized according to the different kinds of intelligences that coexist in a classroom full of children. Shanta Rameshwar Rao, gentle doyen of Vidyaranya, Hyderabad, has founded a school that seems to be doing just that.

Amruta Patil

Luke Haokip



# Schools of the FUTURE



Howard Gardner

If we, as human beings, had only one intelligence - it would either mean that if we were smart, we are smart in everything, and if we are not smart, we'd be poor in everything. Evidence tells us, though, that people's minds are variegated and their capacities are varying. A person may be good at foreign languages, but not at making music or understanding other people. A person may be good at finding their way about in an unfamiliar site, for example, but that does not mean they would be any good at dancing or at solving a logical puzzle. Howard Gardner's theory of Multiple Intelligences evolved as a critique of the notion that people have simply a single intelligence.

Mindfields brings you an excerpt of the keynote speech delivered by Howard Gardner (via live telecast) at 'School of Tomorrow - The XSEED conference on Quality Schools', in Chennai late last year.

Text: MINDFIELDS team

Illustrations: Courtesy iDiscover Education

**T**here is an old joke that goes - "It's difficult to make predictions, particularly about the future". And that is exactly what I have been asked to do - make a prediction about the schools of the future! What I will do, is speculate based on facts.

First of all, there is nothing like one ideal school. In fact, ideally, each student would have his own school, with his own guru, his own goals, and methods for achieving them. There is no (one single kind of) school either - when some people think of schools, they think of schools in post-industrial countries, others about schools in developing countries, some think about public schools, some about independent schools, some about religious schools, some where parents are literate, others where they are not. Therefore we should not speak of "the school" of tomorrow but of various schools of tomorrow. The schools of tomorrow would not be the same as today's schools.

There have been several revolutions - globalization, biological, digital revolutions, and lifelong learning. Globalization is the movement of ideas, money and resources, information, people - all over the world at breakneck speed. The word existed 50-100 years ago - but nobody anticipated the way it would turn out to be today - me sitting halfway around the world and talking to you (in real time) for example.

The biological revolution concerns the way the human brain works. For example, today we are able to measure the nervous system of people and sooner there would be more advanced techniques to



even plant chips in brains to understand what is happening there – merging the human brain with the computer. In genetics, mapping the genome is already a reality. Sooner than later, people are going to be able to ask, "This is my genetic disposition, these are my strengths and these are my vulnerabilities – so what is the right kind of education for me." The digital revolution is, of course, the emergence of high-speed machines, wireless communication, social networks.

People most often think of schools as being a place for young people. But learning no longer stops at the age of ten or fifteen or twenty-five. Because, in this era, if we stop learning, we would quickly become out-of-date. No profession can exist in this era unless the professionals continue to learn and educate themselves. (A person who stops learning) is like an ostrich who

sticks his neck underground. Schools need be constantly aware of this.

(In the future) buildings called 'schools', lessons with paper-and-pencil, teachers who relay information and give tests – these old systems will fade away, and the lines between school, home, and community will blur. Education will take place between a child and a personal computer, it will take place in the street, young people would learn skills from programs and applications designed digitally, education will take place simply by connecting individuals to information and to one another. Fifty years from now, when some of you may still be around, school will not resemble the standalone institution that has existed for many hundred years. Much of education will take place without physical boundaries.' ■

Traditionally, especially in the East, the word 'intelligence' is associated purely with the ability to master material in school. Historically, though, different abilities have been valued at different points of time. Skills admired in the time of hunter-gatherers, for example, would have been markedly different than those admired during the Renaissance.

## VARIEGATED MINDS

Howard Gardner answers FAQ about **Multiple Intelligences**. Read more about Gardner and his work on [www.howardgardner.com](http://www.howardgardner.com)

**Q:** Is Multiple Intelligences really a theory? Can it be confirmed by experiment? Do brain sciences continue to support it?

**HG:** The term "theory" oscillates between two quite different meanings. Among physical scientists, the term is reserved for an explicit set of propositions which are linked conceptually and whose individual and joint validity can be assessed through systematic experimentation. Among lay persons, the term is used to refer to any set of ideas put forth orally or in writing – as the man on the corner says, "I've got a theory about that."

Multiple Intelligences falls somewhere in between these two uses. There is no systematic set of propositions which could be voted up or down by a board of scientists. On the other hand, the theory is not simply a set of notions that I dreamed up one day. Rather, I offer a definition, a set of criteria for what counts as an intelligence, data that speak to the plausibility of each individual intelligence, and methods for revising the formulation. In many sciences, theories occupy this intermediary status. Certainly, theories in the social sciences attempt





to be as systematic as possible yet they are rarely proved or disproved in a decisive way. And broad theories in the natural sciences, like evolution or plate tectonics, are similarly immune from a single, simple test. Rather, they gain or lose plausibility on the basis of an accumulation of many findings over a long period of time.

In brain sciences, a decade is a long time, and the theory of multiple intelligences was developed over two decades ago. We now know much more about the functioning and development of the nervous system. I find the neurological evidence to be amazingly supportive of the general thrust of MI theory. The evidence supports the particular intelligences that I described and provides elegant evidence of the fine structure of such capacities as linguistic, mathematical, and musical processing.

**Q** What do other scholars think of MI theory?

**HG:** There is a wide spectrum of opinion, both within psychology and across the biological and behavioral sciences. Those involved in standard psychometrics are almost always critical of the theory; among those psychologists who are not psychometricians, there is openness to the expansion of the concept and measurement of intelligence. Still, psychologists like neat measures of their constructs and there is frustration that the "new" intelligences are not as readily measured as the standard ones. Also, psychologists really think of intelligence as 'scholastic capacity' while I am trying to expand the notion of intelligence to extend to all manner of human cognitive capacities.



#### VERBAL-LINGUISTIC INTELLIGENCE ("WORD SMART")

They display a facility with words and languages. They are typically good at reading, writing, telling stories and memorizing words and dates. They learn best by reading, taking notes, listening to lectures, and discussion and debate. They are also frequently skilled at explaining, teaching and oration or persuasive speaking. Those with verbal-linguistic intelligence learn foreign languages very easily as they have high verbal memory and recall, and an ability to understand and manipulate syntax and structure.

#### LOGICAL-MATHEMATICAL INTELLIGENCE ("NUMBER/REASONING SMART")

They think conceptually in logical and numerical patterns making connections between pieces of information. Always curious about the world around them, these learners ask lots of questions and like to do experiments. Their skills include problem solving, classifying and categorizing information, working with abstract concepts to figure out the relationship of each to the other, handling long chains of reason to make logical progressions, doing controlled experiments, questioning and wondering about natural events, performing complex mathematical calculations, working with geometric shapes

#### VISUAL-SPATIAL INTELLIGENCE ("PICTURE SMART")

They tend to think in pictures and need to create vivid mental images to retain information. They enjoy looking at maps, charts, pictures, videos, and movies. Their skills include: puzzle building, reading, writing, understanding charts and graphs, a good sense of direction, sketching, painting, creating visual metaphors and analogies (perhaps through the visual arts), manipulating images, constructing, fixing, designing practical objects, interpreting visual images.







Scholars are not known for responding generously to new theories, and so I have not been surprised at the considerable criticism leveled at MI theory. Perhaps a more reliable index of reception is the extent to which the theory is cited in scholarly articles and textbooks.

(Also gratifying) has been the response by scholars in the "harder" sciences (such as biology) on the one hand, and in more distant fields (such as the arts and humanities) on the other. The idea of multiple intelligences has considerable appeal across the disciplines, and my particular choice of intelligences is often endorsed.

**Q:** Do you think we should be able to freely choose what courses we take? Or do you favor a uniform curriculum for all students?

**HG:** In general at the secondary level, everyone should study some history, science, mathematics, and the arts. It is not important to me which science is taught—I am much more interested in students learning to think scientifically. Similarly, it does not matter that much which history students learn, though they certainly ought to be acquainted with their own country. What matters is that the student have some sense of how historical studies are carried out; what kinds of evidence are used; how history differs from literature on the one hand, and from science, on the other; why each generation rewrites history and there can never be a definitive history.

**Q:** You prefer depth over breadth. Do you think students might not learn enough with this approach, and

In general at the secondary level, everyone should study some history, science, mathematics, and the arts.



graduate with major gaps in their knowledge? For example, if a history class were to focus deeply on World War I, and thus not have time to cover Vietnam?

**HG:** It is more important that students learn how to think like a historian, and how historians handle data and draw conclusions. This can only come from in depth study of a manageable number of topics. If the teaching of history were well coordinated throughout K-12, we could certainly learn about all the topics that you mention. The problem now is that a student might study the American Revolution four times and never learn about the French or Russian revolutions at all.

**Q:** Can you recommend techniques for teachers to identify their students' strengths?

**HG:** If you want to get to know your students intelligences during the first weeks of school, I have two suggestions: 1. Take them to a children's museum a few times (or some other kind of rich experience

like a playground with many kinds of games) and watch them carefully. This will complement what you observe in class. 2. Give a small questionnaire about their strengths to the students themselves and their parents and, if possible, last year's teacher. To the extent that all three report the same strengths and weaknesses, you are on pretty safe ground. I don't trust self reports unless they are corroborated.

**Q:** How does intelligence relate to creativity?

**HG:** There are many forms of creativity. Domains involving characteristic combinations of intelligences also exhibit characteristic forms of creativity. So, for example, creativity in physics turns out to be quite different from creativity in poetry or politics or psychology. Generalizations about creativity are destined to be weak; the devil lies in the details about the creative domain in questions.

One cannot be creative unless one has mastered a domain - that process can take up to ten years. Second of all, creativity probably has more to do with personality than with sheer intellectual power. Individuals who enjoy taking risks, who are not afraid of failure, who are attracted by the unknown, who are uncomfortable with the status quo are the ones who are likely to make creative discoveries. Finally, as stressed by my colleague Mihaly Csikszentmihalyi, creativity should not be viewed simply as a characteristic of an individual. Rather, creativity emerges from the interaction of three entities: 1) the individual, with his given talents, personality, and motivation 2) the domain—the discipline or



craft in which the individual is working 3) the field—the set of individuals and social institutions that render judgments about quality and originality.

**Q:** What about the oft-noted connection between mathematical and musical intelligences?

**HG:** There is no doubt that individuals who are mathematically talented often show an interest in music. I think that this linkage occurs because mathematicians are interested in patterns, and music offers itself as a goldmine of harmonic, metric, and compositional patterns. Interest, however, is not the same as skill or talent; a mathematician's interest in music does not predict that she will necessarily play well or be an acute critic of the performances of others.

(However the implied link) rarely works the other way. We do not expect of randomly chosen musicians that they will be interested, let alone skilled, in mathematics. There may also be a bias in the kind of music at issue. Those involved in classical music are far more likely to be oriented toward science and mathematics than those involved in jazz, rock, rap, and other popular forms.

These observed correlations and lack of correlation suggests another factor at work. In certain families and perhaps also certain ethnic groups, there is a strong emphasis placed on scholastic and artistic accomplishment. Youngsters are expected to do well in school and also to perform creditably on an instrument. These twin goals yield a population with many youngsters

Creativity probably  
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personality than with  
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power.



who stand out in math and music. There may be other common underlying factors, such as willingness to drill regularly, an inclination toward precision in dealing with marks on a piece of paper, and a desire to attain high standards. One would have to sample a wide variety of skills—from being punctual to writing cogent essays—before jumping to the conclusion that a privileged connection exists between musical and mathematical intelligence.

**Q:** What happens to multiple intelligences during later life?

**HG:** In many ways, the multiple intelligences seem a particular gift of childhood. When we observe children, we can readily see them making use of their several intelligences. Indeed, one of the reasons for my enthusiasm about children's museums is their evident cultivation of a plethora of intelligences. Nowadays, the children's museum simply has a better fit with the minds of children than does the average school.

It could be that multiple intelligences decline in importance as well as in visibility. But I believe that quite the opposite is true. As individuals become older, our intelligences simply become internalized. We continue to think differently from one another—indeed, differences in modes of mental representation are likely to increase throughout active life. These differences are simply less manifest to outside observers. Consider, for example, what happens in the average high school or college classroom. The teacher lectures, the students remain in the seats, either taking notes or looking vaguely bored. One might easily infer that actually no processing is going on, or that all the process is linguistic in nature. Individuals may also take all kinds of notes and use disparate aids to study and recall. The recesses of our mind remain private. No one can tell the mind exactly what to do. As I see it, the challenge to the mind is somehow to make sense of experience, be it experience on the street or in the classroom. The mind makes maximal uses of the resources at its disposal—and those resources consist in our several intelligences.

**Q:** How could the multiple intelligences theory positively impact schools around the world?

**HG:** Briefly, my theory can reinforce the idea that individuals have many talents that can be of use to society; that a single measure (like a high stake test) is inappropriate for determining graduation, access to college, etc.; and that important materials can be taught in many ways, thereby activating a range of intelligences. ■



# Forest of Learning

Shanta Rameshwar Rao will turn 86 years old this year. She has been Principal of Hyderabad's Vidyaranya school for nearly fifty years; and has made it the kind of space that makes children want to come back even on a holiday, discovers Sridala Swami.

Text and Images: Sridala Swami | Illustration: Studio Umbilical

We enter the green gates of Vidyaranya High School on a lovely Saturday morning in December, for the very first reading from Shanta Rameshwar Rao's Ramayana. Off to the right, we notice children playing in the football field. Even though it is a holiday, there are children here because they like to play and the school seems to be the ideal place in a crowded city.

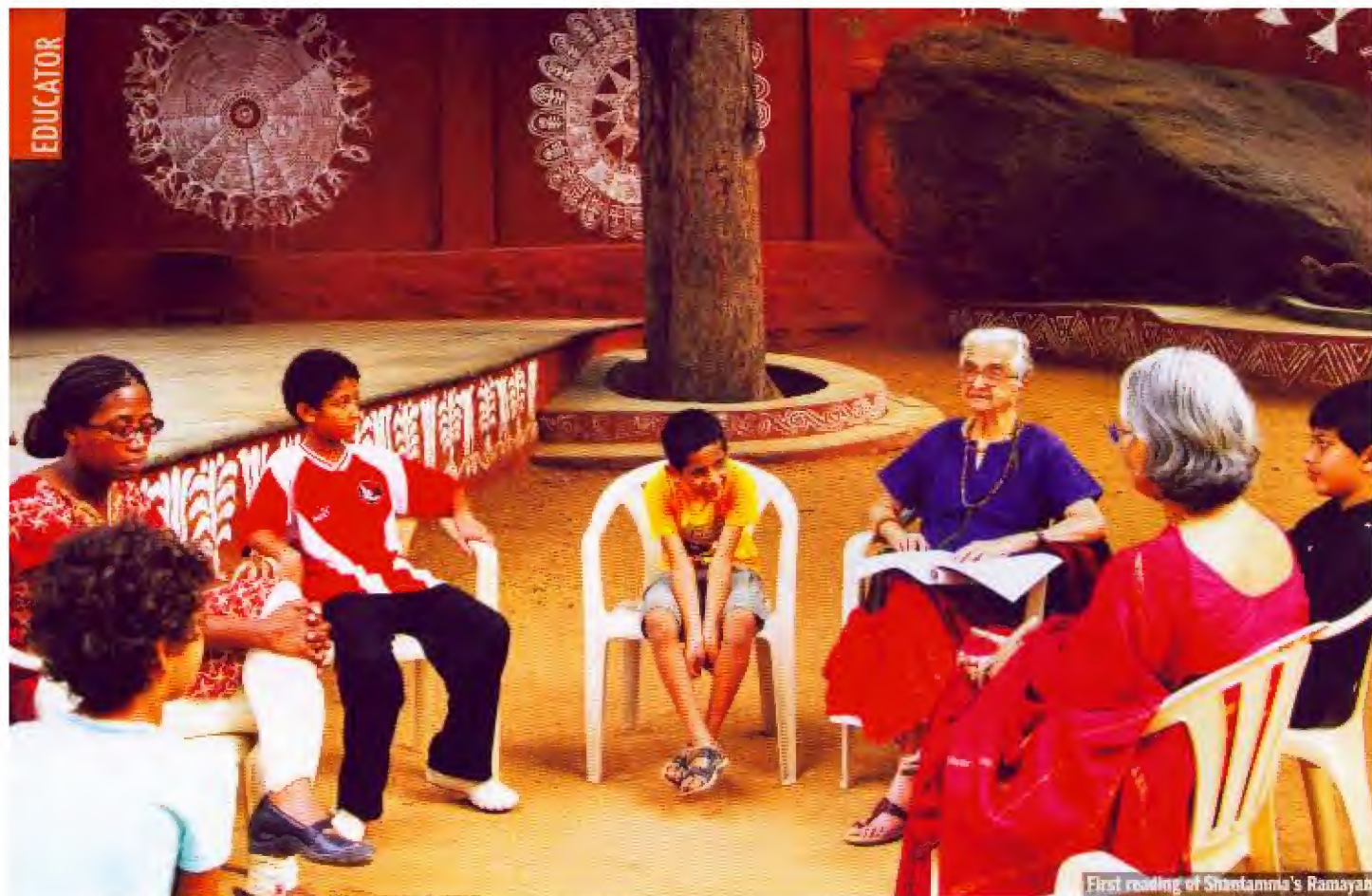
At the back of the school, under a huge tamarind tree, some chairs are arranged in a circle and a table nearby has tea and biscuits laid out. On the ochre painted walls, a teacher and a few students have painted Warli-style pictures. Shantamma, as everyone calls her, is excited and – she claims – a little nervous. She is reading from her manuscript for the first time and we are her first audience. 'We' are three adults and five children. One of them is Shantamma's grandson, who has heard the story before at home but wants to hear it again now, in the company of his friends, in familiar surroundings made strange by this new activity.

Shantamma begins to read. The narrative is easy and fast-paced, and Ravana and Rama speak as you or I would. The children laugh, lean in to listen and are clearly fascinated. Once in a while, Shantamma stops to ask a question and the children respond or give their opinion about some event in the story. We could listen for longer, but Shantamma can only read for so long. She will turn 86 years old this year and has been Principal of Vidyaranya for nearly 50 years. When the school first began in 1961, it had three children and three teachers, in a building that now houses the Employees State Insurance office.









First reading of Shantamma's Ramayan

How the school was started is a story in itself. Like all parents, Shantamma put her daughter in what was considered 'a good school' and kept her reservations about their teaching methods to herself. Every afternoon, she and a friend would go together to pick up their children. One afternoon, the children were kept back as punishment, and Shantamma and her friend waited outside, discussing what they would do differently if they had a school of their own. They moved from fantasy to practicalities: with what money would they start a school? And where? Half-jokingly, they pledged their housekeeping money for the school, laughed, and took their children back home when their punishment was over.

The idea didn't die out entirely, though. Shantamma herself had taught in schools before getting

married, and came from a family of educators — her father was headmaster of a Kendriya Vidyalaya in Madikeri, Coorg, where Shantamma was born. Though running a school was completely different from teaching in one, she and her friend began one in a spirit of adventure and fun. It's the same sense

**Shantamma's gift for story telling is clearly something she has put to good use. (Her emphasis on adventure and fun in the stories is a happy departure from the tendency children's writers have to lecture to children and append a moral to every story.**

of fun and mischief with which Shantamma today reads the Ramayana out to children young enough to be her grandchildren.

The school began in one room, which did time as classroom, lunch room and play space. "We had a bell which we rang religiously," Shantamma says. "A school is no school without a bell! We taught them to read and sing; we told them stories. There was drawing and some blackboard work. And we took them to the zoo."

These were very young children and learning was not separate from play. In time, other parents watched and wanted the same things for their children. There were more children, one more teacher at first and then other mothers joined to teach. Shantamma recalls that, in the early years, there was not much money for





Children at the Vidyaranya School

big salaries – their joke about putting in their housekeeping money was no longer a joke – but there was dedication and a lot of love.

Shantamma had read J. Krishnamurti and was determined that her school would impose no dogma on children; that it would let them flower into confident and sensitive human beings.

"Whenever people ask, 'what is different about Vidyaranya?', people answer, 'oh, there are no exams, no uniforms'. But those things are only the externals. We are a regular school but we want our children to be compassionate. There was a child who was a slow learner. One day, when I sat in class and watched them do their work, I noticed the boy sitting next to the child helping him with his work. Nobody asked him to help; he just did. These are the qualities we want to

foster in the school." Shantamma calls exams 'the death of education' and I admit that my own experience inclines me to agree with her. I have lost count of the times I have been told by well-meaning friends that I should take my son out of the school by the time he is 12 so that he can be 'trained' to take exams properly. They worry that without a drill, he will

**When people ask, 'what is different about Vidyaranya?' people answer, 'There are no exams, no uniforms.' But those things are only the externals. We are a regular school but we want our children to be compassionate.**

be lost when the time comes to take the unavoidable board exams.

It is not something that worries the Principal. From that one-room beginning, she has overseen the move of the school to another building. This other building was her own home, re-arranged and partitioned to make classrooms. In time, the school grew and her house could no longer take the strain of so many people ("The bathrooms were scandalous," Shantamma exclaims). Finally, a new building had to be built on the grounds where the old house stood. It is outside this new building that we are sitting and where we have heard the Ramayana being read.

From those modest beginnings, the school has grown and now has nursery, kindergarten, and classes upto Grade 10. The school is affiliated to the ICSE board – an affiliation not lightly granted. The



teacher-student ratio is roughly 1:25 and there are no more than two sections per class. Extra-curricular activities such as theatre, music, pottery, gardening and sports take up nearly half of every child's school day.

The school staffroom, like the classrooms, is a cheerful place, without being highly-coloured or garish. Here the teachers meet every week to discuss children and teaching – there is no methodology that teachers are made to follow; the school is alternative without replacing one set of dogmas with another. Shantamma herself often teaches, to stand in for absent teachers, or because she wants to.

Listening to her recount incidents from the classroom – the time when one class liked only the lesson on Bill Gates and were indifferent to the chapters on Aung Sang Suu Kyi and Nelson Mandela, and it played on Shantamma's mind for many days as she wondered what to make of today's role models – it becomes clear that she learns as much from the students as they do from her.

To allow them to explore different perspectives, Shantamma gave those children a book to read: *Lynx* by Martin Spice. The book is based on a true story about a lynx cub that a boy finds. The boy's father is a trader in animal parts and he wants to take the cub away to sell. The story had the class gripped and they had long discussions about the book: the ethics of trapping animals, issues about livelihood and environment, and so on. For Shantamma, every class is an opportunity to talk about things outside the lesson open in front of them; an English class can be



**The school began in one room which did time as classroom, lunch room and play space. "We had a bell which we rang religiously," Shantamma says. "A school is no school without a bell!"**

as much about history as about questions on living.

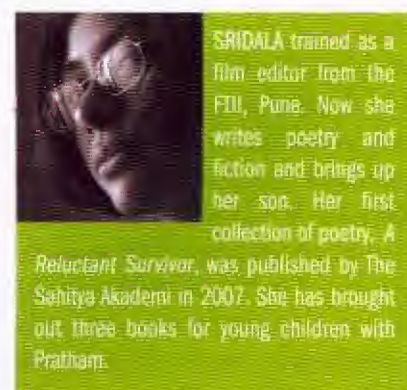
Shantamma's gift for storytelling is clearly something she has put to good use. She published her first book, *Tales of Ancient India*, in the 70s and has since written several books for children, including *The Mud Baby*, *The Bul-bul's Ruby Nose-ring* and *The Rainmakers and Other Stories*. Her *Ramayana* is the last in a series of retellings of well-known stories for children. The language is simple and the tone is mischievous in a reassuring way. This emphasis on adventure and fun in the stories is a happy departure from the tendency children's writers have to lecture to children and append a moral to every story.

As she finishes, she asks the children sitting around her in a circle, "Did you enjoy it?" They nod enthusiastically. It occurs to me that

she has never appeared to them as a Principal or as a figure of authority to be feared and respected – during the story session, one of them even argued with her about an incident, telling her in his turn another version of the story that he had been told. It was an aside that became a detour of a full five or ten minutes. Shantamma was neither impatient nor in a hurry to return to the story.

After the children scatter away to play, Shantamma says to me, "You know, I usually say only one thing to children when they are about to finish school. I say to them, 'when you leave school, live without fear. And don't be afraid of failure.'"

It might sound like a non sequitur but under the circumstances, it is not: Shantamma – the author of so many books, an educator of so many decades – was nervous about reading aloud her story to children. But with the manuscript open and the attentive faces of children in front of her, Shantamma discarded her doubts and read with enjoyment, her eyes sparking with as much enthusiasm as the eyes of the children sitting around her. ■



**SRIDALA** trained as a film editor from the FII, Pune. Now she writes poetry and fiction and brings up her son. Her first collection of poetry, *A Reluctant Survivor*, was published by The Sahitya Akademi in 2007. She has brought out three books for young children with Pratham.



# SO YOU WANT TO BE A TEACHER

Once there was a man named Sanjay. He wanted very much to be a teacher. So he went to seek the advice of the wisest, most highly respected counselor in the land. "Wise counselor," Sanjay began, "it has always been my dream to be a teacher. I want to stimulate the minds of the young people of our land. I want to lead them down the road of knowledge. Please tell me the secret of becoming a teacher."

"Your goal is a commendable one, Sanjay. However, it is also a very difficult one to achieve. First you must overcome three major obstacles." "I am ready to meet the challenge," answered Sanjay bravely. "First you must swim the Sea of Children," directed the knowing counselor.

Sanjay started off to swim the Sea of Children. First he had to learn their thirty-eight names. He had to send the line cutters to the end of the line. He made the paper plane-throwers stay after school to clean the room. He commanded the name callers, pushers, and punchers to apologize to their victims. He acknowledged those who finished assignments and those who were sitting in their seats quietly. Sanjay checked passes to see how many children were in the bathroom. And he tracked down students who were gone longer than was necessary. He arranged the desks in alphabetical order, then boy-girl, boy-girl, and finally into small groups of four. He lined his children up for physical education and music and library and lunch. Tired and shaken but

still undefeated, Sanjay returned to the counselor for his second task.

"You are a very determined lad," said the advisor. "However, now you must climb the Mountain of Paperwork."

Sanjay set out at once. He wrote objectives and drew up lesson plans. He made out report cards and graded papers. He filled out accident reports, attendance reports and withdrawal reports. He completed inventories, evaluations, surveys, and request forms. Finally, he made copies and more copies. He ran them off until he was purple in the face. But the courageous man's resolve never dwindled. He went to the wise counselor for his third task.

"You are indeed very strong, Sanjay. But this third task will take all the courage you can muster. You must now cross the country of Duties and Committees."

At first Sanjay was hesitant. But his convictions remained steadfast. He began his long journey across the country of Duties and Committees. Sanjay took exam duty, bus duty, and recess duty. He was on the social committee, and annual day committee, and the faculty advisory committee. He went to PTA meetings, and ever manner of workshops. He organized

cultural events, talent shows, and book clubs. At last Sanjay reached the outskirts of Duties and Committees. Exhausted but happy, he returned to the knowledgeable counselor.

"I swam the Sea of Children. I climbed the Mountain of Paperwork. I crossed the country of Duties and Committees," Sanjay proclaimed. "Am I not worthy of the title of Teacher?" "Why, Sanjay," began the counselor, "you have been a teacher all along."

Sanjay protested, "But I have not stimulated any minds. I have not guided anyone down the road to knowledge, I have not had any time to teach."

"Oh, you say you want to TEACH!! I thought you said you wanted to be a teacher. Now that is a completely different story!" ■

Courtesy: Innovative Teachers' Chat list  
([innovativeteachers@egroups.com](mailto:innovativeteachers@egroups.com))







# PROTRACTOR DOORS, NUMBER LINE FLOORS

Building as Learning Aid (BaLA) is an innovative way of looking at the relationship children have with their school building. Kabir and Preeti Vajpeyi, co-founders of Vinyās (a centre for architectural research and design) and the originators of BaLA have developed 150 child-centric design and architectural makeover ideas for state-run schools across India. Rima Chibb brings us the story.

Text: Rima Chibb  
Photos: Vinyās

Enter any classroom and this is what you are likely to see - children pushing chairs, pulling desks or throwing furniture around in their free time. BaLA enters the scene with a small measure - the furniture is marked in paint with its weight and height. So that a child knows that she just shifted a 5 kg chair, or lifted a 10 kg table! A random act of energy venting turns into a measurable achievement of what the child has done - a very big deal from the child's point of view!

The moment children enter the school premises, milestones on the pathway inform them of how far they are from the classrooms. 30 metres. 20 metres. 10 metres. Numbers that are conventionally confined to books suddenly become very real, and help kids estimate the actual distance covered.





Kabir Vajpeyi, the architect behind BaLA describes the formulation of these design concepts: "We did a detailed study on the behaviour children exhibit in school spaces – how they interact with the floor, wall, pole, pillar, corridor. We made observations to find out how we could expand this interaction ... give unique experiences to children, contribute to the fun value of their

learning process. How can we take a barren space, and break it up to create pockets for girls and boys, children with different needs, children who are boisterous, children who take the backseat and observe – all these needs are equally valid".

BaLA is about maximising the educational value of a built space for children. It is an interdisciplinary concept that combines architecture and design with child development, pedagogy of learning languages, math and science; and a child's own aspirations. It attempts to address the learning needs of children while keeping in view the four pillars of learning (as propounded by UNESCO for education in the 21st century) – learning to know, learning to do, learning to live together and learning to be.

### Thoughtful Spaces

School buildings are not mere structures or a collection of rooms. They have the potential to energise the whole learning environment. And yet, though a school building is the most expensive asset of a school, little is done to use the physical space as an active learning resource.

BaLA aims at using elements like the floor, walls, pillars, staircases, windows, doors, ceilings, fans, trees, flowers, or even rainwater as learning aids. For example, a window security grill can be moulded to help the children practice pre-writing skills or to understand fractions; a range of angles can be marked under on the floor to explain the concept of angles. Every time a child opens the door, they can learn about angles; ceiling fans can be painted to function as colour wheels; shadows of a flag-pole can act like a sundial to measuring



time; planting trees that shed their leaves in winters and are green in summers make a comfortable outdoor learning space.

"If language development happens when we speak to each other," says Kabir, "we must create spaces for communication – within a large group, between peers, between older and younger children, boys and girls, teacher and student. This communication may happen as they are walking, sitting or standing next to the wall. A shy child may want to write or draw to express themselves. We create a range of options throughout the environment which are age-appropriate and accessible to all unlike TLM (teaching/ learning material) which is subject and grade specific."

So elements created by BaLA are open-ended, activity-based and encourage self-learning. They are based on the assumption that learning is a continuous process and happens all the time. These interventions are easily accessible outside the confines of the classroom and children can use them before and after school hours. Structured as well as unstructured interactions can happen on steps, in corridors, in the outdoors. Partially understood concepts in class get reinforced





Prewriting grooves on wall panels of NDMC school New Delhi

through peer learning as children revisit them with a 3-D multiple sensory experience.

### How BaLA Happened

The concept had its genesis in 1990's Lok Jumbish Programme in Rajasthan. The Lok Jumbish was a turning point in the history of education in state-run schools. One of the major highlights of this program was to involve the larger community in the process of education. Kabir, a young architect in those days, happened to watch a late-night street play about education. He made a resolve to explore the space between education and architecture, and the possibility to connect the two. It was no easy task. Even today, while the State's intent is to create schools which have a child-focused learning

environment, the sensitivity and training of the implementers (project engineers, civil engineers, masons) towards this aspect is largely non-existent.

"In India you don't have the resources to make those 8 lakh new schools. Where will you get the funds? Where would you get so many engineers out of the engineering colleges? These are real problems. We tried to intervene in a system which usually works with no architects, and built upon sensitivity and existing attitude. Scaling-up of this concept also had its share of struggles. Lok Jumbish funds allowed for only repair of school buildings and nothing more" says Kabir.

With this reality check in place, a series of hands-on sensitisation

workshops were conducted for teachers, headmasters, architects, project engineers to look for alternatives to reach the larger goal. A consensus was reached that it made sense to strengthen existing infrastructure rather than create a new one.

### Process and Challenges

What can well-meaning architects do to benefit children, specially when there is no precedent? This was the pressing question. Architects and engineers on the field had started attending the teachers training programs. The incentive being free food and getting to know the needs and circumstances of the school. Each architect was encouraged to give an idea, work out the feasibility, timeline of execution and take complete responsibility of





Activity map of India, Gujarat



Board games on floors of Savda Ghevra school, Delhi



Preeti &amp; Kabir at Kantela school in Porbandar addressing community

the implementation - all this was linked to their financial incentive package.

An unusual synergy started developing - the collaboration of teachers and headmasters with the engineers and masons to do something relevant for the child. For the first time, the project engineers really 'looked' at the ultimate client they were servicing- the child! Results started showing, school buildings were looking inviting - and they made the larger community finally sit up and take notice. People started donating funds and took proud ownership to make this initiative successful.

By then the Building Development Fund of Lok Jumbish had collapsed and the learnings from this and the District Primary Education Program (DPEP) were integrated into the national level, more ambitious program known as the Sarv Shiksha Abhiyaan (SSA). BaLA initiatives were shared with fresh perspectives and detailed insights. Architects, pedagogues, child development professionals, child behaviour analysts, environment experts and people from the field of culture, language, science and arts came on board as think tanks and implementers. The intent was to continue the process of innovation where each school identifies its own creativity and have its own character and ownership - in the initial 26 sites at Lok Jumbish, no two sites looked the same, post-intervention. The "what to do" came from the teachers, the "how to do" came from the architects and engineers and the "task to be done" was done by the masons engaged by the school and surely the character of BaLA started emerging.





Tyre climber at Jagriti School, Mushidabad



Children on Number line stepping stones along a Mystery wall of NDMC, Delhi

### Reason to Celebrate

"Wherever BaLA has been implemented well," shares Preeti Vajpeyi (Kabir's wife and the other half of the Vinyas team), "the self-learning success stories are encouraging. Learning is no longer teacher-directed all the time. Instead

there is group learning, peer learning and cooperative learning. Being permanent, these design elements do not get lost or consumed, and are available all the time unlike other teaching aids."

The ripple effect was infectious. One of its success stories has been Jingle

Bells Nursery School, Faizabad—privately run school where the management was convinced about its benefits. The school set up a highly interactive 'Tyre Playground' which takes into account all the domains of child development: Physical, Social, Emotional, Cognitive, Creative and even Environmental (since all the materials were recycled). These innovations were shared with all education stakeholders through photographs and videos across the country.

In a remote village school of Junagarh, Gujarat, the Headmaster Chandubhai Dhanani attended a teacher training workshop on the effective usage of BaLA. On his way back, instead of going home, he got off the bus and went straight to the local fabricator and manufactured a barrel wheel with wooden flats fixed it on a channel which runs on discarded ball bearing of a truck recycled it into a indigenous Zorbie ball for children.

It was further innovated upon in another school to add a cognitive concept which involved cyclical patterns. The story was clear- BaLA was forever evolving as it got accepted and spread to different individuals, schools, topographies and cultures.

Since the head master and the teachers are the key agents who receive Government funds to implement BaLA, they get all the credits for this visibly changed outlook in schools. It was found that these interventions motivate teachers to do better teaching, resulting in increased attendance and growing community enthusiasm.





Vinyās continues to provide technical support to design, implement BaLA in thousands of SSA schools across the country in states ranging from Jammu and Kashmir, Himachal Pradesh, Punjab, Delhi, Rajasthan, Gujarat, Madhya Pradesh, Bihar, West Bengal, Orissa, Karnataka, Tamilnadu, etc. through technical support materials, orientation, workshops on capacity building of education planners and administrator, pedagogues, teachers, and civil engineers.

However it's also had its share of setbacks. Distorted versions of BaLA innovations have found a token cosmetic appearance in some schools especially in Punjab. Painted versions of the 3 Dimensional concepts are being treated as mere decoration with no additional value for the child and no ownership of the community.

Kabir & Preeti reflect on the challenges that lie ahead : How does BaLA upscale itself to reach the unreachable pockets in remote areas? How does it address the gaps created by lack of resources and teachers? How can it provide for capacity building of so many teachers to effectively use it to its maximum potential? And should it be integrated with the core curriculum of learning? How can this learning be measurable? And finally, how do you ensure that each and every child benefits out of it?

With a thrust on activity-based learning all over India, BaLA reforms in schools are undoubtedly more relevant today. A big indicator of its success is that even when the schools closes for the day, BaLA induced self-learning continues. Kids joyously push their classroom doors open, measuring the angle of the door on

the protractor painted on the floor - 10 degrees, 20 degrees, 30 degrees. They tickle their brain with the abacus, visual illusions and negotiate the tyre climber as they head home only to rush to school early next morning, before time, to stand against the measuring scale on the corridor wall, and see if they have grown taller overnight! ■



**RIMA CHIBB** is a filmmaker and development communicator. Has taken it upon herself to undo the all-pervasive 'dumbing

down' brought in by the Idiot box. Conducts creative expression workshops for youngsters and is fearlessly empathetic with those who have learning struggles. You can reach her at [rima.chibb@yahoo.com](mailto:rima.chibb@yahoo.com)

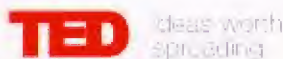




## 'Be the Change You want to See in the World'

MK Gandhi's simplest instruction is one of the hardest to implement, because the journey from intent to action is such a long one. For Babar Ali of Ganganagar village (Murshidabad, West Bengal), the journey just seems to have been an instinctive one. At 16, he is the world's youngest headmaster.

Photo: Courtesy TED / James Duncan Davidson



Around the world millions of children are not getting a proper education because their families are too poor to afford to send them to school. In India, one schoolboy is trying to change that. After being profiled by CNN-IBN's 'Real Heroes' and BBC's 'Hunger to Learn' series, the story of Babar Ali's 600-strong Anand Siksha Niketan seems to be everywhere. The attention has brought him some much-needed funding, and a trickle of journalists from Kolkata to the Beldanga railway crossing – a five-hour bus ride. Babar's responses have gone from hesitant to soundbyte-ready. The 16-year-old is riding the wave of fleeting celebrity.

In November 2009, Babar Ali moved a packed auditorium in Mysore to standing ovation. Translator in tow, he shared his story simply, in Bengali, holding up a clutch of photographs that the camera strained to zoom in on. What makes Babar's story so remarkable is its generosity, and its utter simplicity. That Babar Ali's story is one-of-its-kind is perhaps, what we need to remedy most.



What is now Anand Siksha Niketan grew out of a game. "We used to play 'school-school' with me as teacher," recalls Babar. "At first I was only play-acting, but soon it became real. My friends had never seen the inside of a school, so they enjoyed playing students. They ended up learning arithmetic and enjoying it." It was all very simple. Babar would wake up at six in the morning, travel twenty kilometers to his school, Raja Govinda School, in Beldanga. Fifteen kilometers of that journey was by bus, five by foot. At school, Babar learnt his lessons, then made his way back home. At four in the afternoon, he gathered a gaggle of friends and taught them what he had learnt at school that day. The game became reality in 2002, with a student body of eight.

Babar is one of three siblings. The family lives in a thatched brick house the size of an urban kitchen, but clearly, Babar is better off than most of his peers in Ganganagar, who cannot even dream of the couple thousand rupees it takes to travel to and attend school every year. Even when he started off sharing his learning for free, the notion was not without its share of detractors. There were the jibes from elders: what's the point of teaching those who don't get enough to eat? How will girls get married if they are educated?

It helped Babar's cause that his father, Nasiruddin Sheikh, firmly believes that education is a man's true religion. Sheikh, a jute-seller by profession and a Class II dropout, initially funded his son's venture with his own meager income, buying floor mats and stationery, and supplying rice for the mid-day meal from the family's fields. Word got around though, and help

began to trickle in from Babar's own teachers, the local Ramakrishna Mission, IAS officers, even the local police. The mid-day meal is now courtesy the state administration. Getting 600 students to enroll was no easy task. In this hamlet, abject poverty means extra hands on the field are always welcome and education is a luxury few can afford. Babar has to ensure that education at his school is absolutely free.

Like in the earliest days of its inception, Anand Siksha Niketan's schedule begins at four every afternoon, after Babar Ali gets back from his own classes in the Beldanga school (he is now studying in Class XI). Meanwhile, his students, having tended to the field, cattle and housework, arrive in time for opening bell. Babar Ali then takes on his other identity – that of headmaster. Children sing the national anthem. Standing on a podium, Babar Ali talks to them about discipline. Then, the learning begins.

The teaching staff of nine is made of high school student volunteers. "Education dispels darkness. It's the way to a better life around here," says Imtiaz Sheikh, a volunteer, who's also a Class X student. "That's why I come to teach." Is it hard to get the children to listen, being so young themselves? "The narrow age gap works to our advantage," says Babar. "We are more like friends. The rod is spared in my school."

The school has no classrooms – in fact, there is no permanent building. So all learning takes place outdoors, in different parts of Babar's house and backyard. Some children are seated in the mud, others on benches under a rough, homemade shelter. The family

chickens scratch around nearby. In every corner of the yard are groups of children. Sessions may be disrupted by a passing rain drizzle, or suspended if the drizzle turns into a downpour. – But the kids will be back tomorrow.

The youngest children are just four or five; the oldest are studying in the equivalent of Grade VIII. Children not old enough to work are easier to enroll, so Class I and II have over 200 students. Class VIII has just 20 students, studying 10 subjects, mostly taught by Babar and Debarita Bhattacharya, another volunteer. Textbooks are free from Class I to V, but the rest requires money to be arranged. On any given day, there are close to 400 students physically present in Babar's front yard. Babar hopes that the school will go on to offer higher secondary classes. The school is too bare-boned to be recognized by the state government but it tries to follow the West Bengal Board syllabus. Local authorities have recognized the efficacy of Babar's school as a literacy centre.

Recently, Anand Siksha Niketan has been lucky enough to receive a donation of land. Babar Ali's next dream is that of a pucca building with residential facilities for students who come from a long distance away (even today he has a mother-daughter student duo who travels 20 kilometers to his school). He dreams of labs, a sports ground, even an auditorium. If imagination is a resource, then Babar Ali and his school is full of unimagined riches. ■

**TED** Ideas worth spreading





# Painting an Equation

There is no a real distinction between the “arts” and the “sciences”. Many thinkers have proposed that the creative process goes through a series of stages, which are equally applicable to artistic and scientific creations. Mohinish Shukla explores the joyful confluence of 'streams'.

Text: Mohinish Shukla

Illustrations: Amruta Patil

Growing up in a dozen or so schools throughout the country, I came to understand that the waters of Indian education in which we splashed as children were but the confluence of at least two branches, the Arts stream and the Science stream: And as we grew older, we had to choose which branch we swam upstream along. But is it so clear that there are two (or several) streams? On the one hand, human achievement is certainly multifarious, be it science, sculpting, songwriting, sport, or statesmanship. On the other hand, we recognize creativity both in art and in science. In this article, we will explore the idea that all kinds of human creativity are variations of a single theme.

In February 1996, IBM's Deep Blue computer beat the world chess champion, grandmaster Gary Kasparov. As the makers of Deep Blue at IBM described it, the machine was no more than a very powerful calculator: it employed a brute-force search of possible chess moves, evaluating them at a rate of 200 million moves per second.



To the grandmaster, the machine felt like it was intelligent and creative, and that the machine was thinking. Chess had been a favorite target of the Artificial Intelligence (AI) community since both the rules of play and the final outcome are well-defined, and yet it was thought, by computer scientists, to require thinking and creativity. Deep Blue's victory showed in a very tangible way that, at least in some cases, "intelligence" of the creative kind can be equated with a great deal of computing power.

Today, a desktop PC is faster than Deep Blue, and yet we don't think of PCs as being particularly intelligent. Intuitively, we see a difference between solving a chess problem and, say, Newton coming up with the laws of motion. But recently, even the notion that scientific discoveries require intelligent insight has come under attack. Eureka, at the Cornell Computational Synthesis Lab, "discovered" Newton's laws of motion by examining videos of objects around it. More impressively, scientists in the UK have demonstrated that their robot scientist, Adam, could generate and test (using lab automation) novel hypotheses about yeast functional genomics.

The creators of Adam had a specific goal in mind: to advance the automation of science. In their view "the basis of science is the hypothetico-deductive method and the recording of experiments in sufficient detail to enable reproducibility". In this view, the scientist applies the rules of logic over a set of statements (sentences or propositions that are either true or false, like "All geese are white") to come up with hypotheses. These hypotheses are tested empirically (statistically) to validate them in reality. Therefore,



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since a scientist, whether human or robot, starts with a hypothesis that is created through a logical analysis of known statements (facts), and since it is possible to program the rules of logic into a computer, Adam is capable of generating novel hypotheses by itself.

This view of scientific thinking is presumably to be contrasted with a more intuitive way of thinking. For example, in a survey about creativity in the early half of the 20th century, one respondent had this to say: "The words or the language, as they are written or spoken, do not seem to play any role in my mechanism of thought". It might come as a bit of a surprise that this respondent was the iconic scientist par excellence, Albert Einstein, and even more that he was actually talking about how he did science. In fact, this survey by the French mathematician Jacques Hadamard, came to the conclusion that practically all the (primarily American) mathematicians surveyed "avoid not only the use of mental

words but also, [just as he did], the mental use of algebraic or any other precise signs ..."

That is, as opposed to Adam, the process of creation for these mathematicians seems to involve the manipulation of vague auditory, visual and even kinesthetic objects that they cannot really express in concrete language. In fact, in his opus about the creative process *The Act of Creation*, the European writer and thinker Arthur Koestler contends that in original scientists, as a rule, "verbal thinking plays only a subordinate part in the decisive phase of the creative act". It seems that the central creative component of scientific endeavor is much more like the nebulous "inspiration" of artists than the neatly objective, programmed rules of the robot scientist, Adam.

Therefore, on some level, there is no real distinction between the "arts" and the "sciences". Many thinkers have proposed that the creative process goes through a series of stages, which are equally applicable to artistic and scientific creations. The first stage involves the gathering of data, be it scientifically gathered, or a collection of feelings, experiences and observations. The second stage involves the gentle tweaking, intermingling and recombination of the data to produce a novel variation. The third stage is recognizing, in this variation, a novel solution or insight. How exactly this insight might come about is one of the mysteries of human cognition. Nevertheless, this insight constitutes the creative core that then must be further refined and re-worked in the final stage, whether as a painting or a new mathematical theorem.

The mysterious part of this process is





that there does not seem to be any necessary logical connection between the data and the solution. Koestler likens such intuitive insights to "...an immersed chain, of which only the beginning [the data] and the end [the solution] are visible above the surface of consciousness". While this might be easy to understand in the case of the visual arts, it is also evident in mathematical conjectures – statements widely believed to be true, yet unproven.

However, human nature demands that we find the answer to every mystery. In the case of creativity, this means trying to understand how the unconscious, underwater, links are forged in the immersed chain that leads from data to insight. But first, we should ask: is it possible at all that we find an answer to this mystery? Might creativity not be a unique attribute of the human mind?

Well, there is one fantastic example of creativity arising from inanimate matter, and it is all around us: the evolution of life on earth. Here is one example of inanimate matter organizing itself into simple life forms and thence to highly complex creatures, capable of sending themselves off to the moon. Of course,

this process is quite slow – it took evolution more than three billion years to create our species. Nevertheless, the fundamental way in which evolution works seems superficially similar to the first few stages of the creative process, wherein pre-existing elements (the genes and their variants) are re-combined in various ways to produce novelty. We needn't push the analogy – suffice it to say that a great deal of processing, as in the billions of years of evolution, can give rise to something that we might call 'creative'. This immediately suggests that the processes that generate creativity inside our minds might be analogous to such processes of minor modifications and re-combinations that generate evolutionary novelty.

But, just like most mutations have no effect in evolution (or are harmful), only a few of the novel rearrangements might contain a genuinely creative insight. What is the equivalent of natural selection in the case of creative ideas? How is one to know which rearrangement is the most fruitful one? For Henri Poincaré, the French mathematician (who proposed a similar sort of idea for how creativity came about), the selection was done by 'the aesthetic sensibility of the real

creator'. That is, by selecting the most beautiful. Now it might seem strange to some that a mathematician should appeal to beauty as a measure of a creative (in his case mathematical) insight. But consider the view of another great mathematician, the Hungarian Paul Erdős: "Why are numbers beautiful? It's like asking why is Beethoven's Ninth Symphony beautiful. If you don't see why, someone can't tell you. I know numbers are beautiful. If they aren't beautiful, nothing is".

This gives us a story about how the underwater chain linking observations to a creative insight is forged: by the mutation and combination of pre-existing ideas, filtered through a sieve of aesthetic sensibility. Still, this answer, as noted by Koestler in his book, is not satisfactory. For example, from what kinds of observations did Shakespeare pull out "Shall I compare thee to a Summer's day?" And what exactly are the unconscious mechanisms that do the actual job of generating novelty? And where does the aesthetic filter itself come from?

The short answer to these questions is that we don't know. Personally, I favor the possibility (anticipated in Koestler's book) that this unconscious mechanism is just more of the same. More, in that it is capable of performing mental computation at an incredibly fast pace. But more also in the sense that the unconscious mind might embody computations and logical systems, the likes of which we cannot dream of. Or rather, we can only dream of – for, as Koestler points out, the logic of dreams appears to be different from the logic we understand when we are awake. In other words, our pedestrian, everyday, conscious logic might be just one of several kinds that the



unconscious has available to it. And similarly, our conscious processing might be of an inferior sort, compared to our unconscious processing. In saying that the unconscious is more of the same, I also intend to suggest that the unconscious is not fundamentally different from what we know of human cognition, and certainly not incompatible with it. For example, just as Newtonian mechanics is a special case of relativity, so too might the conscious mind be a special case of the unconscious.

That still leaves the question of the aesthetic filter unresolved. Maybe it is the solution most intelligible to the conscious self, and requiring the shortest links in the chain. For example, take language. We recognize well-formed sentences because they respect the rules of grammar, so Chomsky's famous "Colorless green ideas sleep furiously" sounds like it just needs an appropriate context to understand. That is, the generative mechanisms of language allow for such sentences, but we select just those that also make sense to us. Koestler calls such structures, derived from applying the rules of the game (in this case, the rules of English grammar), matrices. For him, creativity comes about through the bisociation (two-way association) between seemingly incompatible matrices.

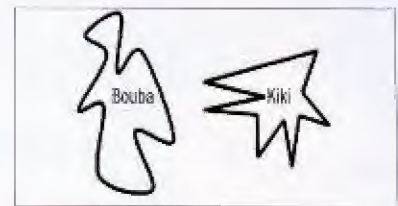
For example, we enter this life and we exit it; an actor enters on-stage and exits it. The common features of entering and exiting something binds life and the stage, and leads to creative pronouncements like "All the world is a stage" (W. Shakespeare, *As You Like It*). Similarly, Neils Bohr's structure of the atom used the solar system as a metaphor, with the electrons (planets) revolving around a massive, central nucleus (the sun).



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Thus bisociations – analogies and metaphors – play a crucial role in creative processes. Again, we don't have a good idea of where these bisociations come from. Certainly, it is the case that a prepared mind is more likely to make links where no one saw them before. But more recently, an exciting possibility has come about from the study of a condition that was once thought to be just a fancy: synesthesia. A synesthete is one in whom a certain perceptual stimulus (e.g. the printed letter 'A') evokes a strong percept of a different kind (e.g. a specific shade of red). Besides such grapheme→color synesthetes, scientists have recorded instances of day-of-the-week→spatial position, music→shape and number→personality ("4 is honest, but ... 3 I cannot trust ...") and many others. V.S. Ramachandran, the charismatic neuroscientist, showed that some form of synesthesia is probably present in each of us, {when we associate a shape like the one on the

left with the nonsense word "bouba", and the one on the right with "kiki".



He therefore suggests that differences in how the brain is wired up might account for differences in how, to use Koestler's terms, people might bisociate seemingly incompatible matrices. In particular, he suggests that it is the enhanced cross-connectivity in their brains that accounts for "... the eight times more common incidence of synesthesia in poets, artists and novelists." ■

Note: This article is biased towards looking at creativity in the scientist, partly because creativity in the artists is taken for granted, and partly because I myself am in the sciences. Nevertheless, to some extent, the dichotomy between a cold and calculating scientist and a warm and intuitive artist is false – not the least because, by their own admission, scientists rely on intuition and an aesthetic sense for their achievements. If this is true, then the only thing that distinguishes a painter from a mathematician is the medium of expression.



**MOHINI SHUKLA** started off looking at microbes and writing programs. Has since been interested in how yeast cells respond to stress, how rat testes pack DNA into sperms, how forests are structured, how we hear fluent speech as a series of words, loves cooking, video games, science fiction and PG Wodehouse. You can read his writing at <http://mohini.blogspot.com>



## Making HOUSEHOLD Waste Useful

A unique endeavour that helps you manage your household waste and convert it to useful high-quality compost. It supports you with flexible service plans to achieve your goal of becoming a green citizen.



Text: Mindfields Team  
Photos: Daily Dump

Poonam Bir Kasturi set up Daily Dump in 2006 with a small core team of five and a potter who made prototypes of the product she had in mind. "Why Daily Dump? Everybody in America thinks there is only one way to use language, and 'daily dump' should mean the same thing for everybody – if you think through it the name is actually very apt. Also we do not have a marketing budget, we have to do all these gimmicks," she quips with a grin. In India, no commercial home composter was available till the Daily Dump designed and started selling their products.

Daily Dump's products or composters enable homeowners to

convert their wet waste (kitchen waste) into eco-friendly compost. The product uses a natural process of aerobic decomposition to achieve its objective of creating compost at home. It requires some amount of handling but is relatively user-friendly. "In other words, Daily Dump allows the opportunity to homeowners to contribute to the reduction of city waste.

The Daily Dump composters are made of terra cotta and sourced from village potters. The designs are 'open source,' that people are free to replicate, adapt, build on, sell and use. On why she wanted it open source she says, "I knew nothing about composting – I was working

on two-three projects with my students and we were trying to see how one could build an institution on an open source system. How do you build an idea where you instead of going through the regular landscape of competition, marketshare, sales? How do you create a business model for India where there are so many people?"

"The moment you bring in one of those business models from abroad people lose out on jobs – there are enough statistics to show that. You think you are creating a job – but because of these jobs you have lost out so many other jobs. Unfortunately not many see it like that."



Poonam does not only want to take her product to the cities but also to suburban areas and with this regards she set up the 'clone' model. This enables other entrepreneurs in other locations to start their own versions of Daily Dump which is fully committed to enable these clones. Daily Dump has a robust design that is easily replicable and which can be adapted by most people all over India. This also provides additional jobs the potters. "They have benefited significantly and their profitability has increased since they started making these products," she adds.

Daily Dump products work well in independent homes and Poonam and her team are currently working on a 'mechanical composter' for use in flats. Her vision is to see a composter pre-fitted in every new flat that is sold, as a standard fitting.

Daily Dump custom-fits composters at homes and other establishments and also provides maintenance advice and assistance through its service plans. "The products, apart from being an enabler to reducing waste, allows one to get over over the social stigma attached to waste in our country without being preachy. It makes the job of taking care of your waste possible and doable," she quips between sips of tea.

### Composting

Composting is the decomposition of plant remains and other once-living materials to make an earthy, dark, crumbly substance that enriches soil. It is a process of recycling your kitchen and garden wastes, and is a critical step in reducing the volume of garbage needlessly sent to landfills for disposal.

Composting is not a new idea. In the natural world, composting is what happens as leaves pile up on the forest floor and begin to decay. Eventually,

nutrients from the rotting leaves are reclaimed by living roots. This completes nature's recycling process.

There are three kinds of composting:

1. Aerobic composting (composting with air – in the presence of oxygen)

Daily Dump uses this process.

2. Anaerobic composting (composting without air – in sealed spaces)

3. Vermicomposting (composting that is speeded up by earthworms)

So in a way composting is recycling, because compost is nature's way of recycling nutrients

### Understanding Compost

Good composting is a matter of providing proper environmental conditions for microbial life. Compost is made by billions of microbes (fungi, bacteria, etc.) that digest garden and kitchen wastes that you provide them. If the pile is cool enough, worms, insects and their relatives will help out the microbes. However, like people, these

living things need air, water and food. If you maintain your pile to provide for their needs, they'll happily turn your garden and kitchen wastes into compost much more quickly.

Daily Dump products are inexpensive and range from Rs 100 to Rs 1500 depending on one's requirements. And even if one does not have a garden – disposing of compost is never going to be a problem since there are bound to be many takers for it, starting with the local park. ■

#### DAILY DUMP

(www.dailydump.org)  
2992, 12 A Main, HAL Ind Stage,  
Bangalore 560 008, India  
(+91-80) 41152288  
(+91) 99164 26661



**What is Compost** The process of complex organic matter breaking down into its simpler elements is called decomposition, which results in a dark, earthy, sweet smelling, nutrient rich humus called compost. This rich substance can be made from our kitchen and garden waste that we normally throw away as garbage into roadside dustbins where it accumulates and causes an unhygienic stinking mess. Composting takes time – anywhere between 3 – 6 months.



FOOD WASTE

80% reduction  
in volume



COMPOST



## AWARDS & HONORS FOR DAILY DUMP

- Nominated for the INDEX awards 2007 – an international award to improve the quality of life
- Awarded the Green Product of the Year by Anchor Better Interior Excellence Awards 2007
- Made it to the final round of the TATA NEN Hottest Startups 2009
- Indira International Innovation's 'Star Entrepreneur of the Year Award', 2009
- Made it to the final round of the Sankalp Social Enterprise and Investment Forum Award 2009.

## WHY MUST WE COMPOST

- If our city's manage organic waste at source, we could spend tax-payers money on more urgent projects like schools, health and infrastructure.
- Organic waste is 60% water. The municipal department spends fuel, cartage and labour transporting water!!
- Our organic waste reaches large dump sites which are illegal and unscientific, adversely affecting communities and the bio-diversity around them.
- Organic waste mixed with batteries, plastic, tubelights and medicine pollutes ground water, soil and air.
- If we begin taking responsibility for our waste, we can put pressure on builders and planners to include composting units and water harvesting in every complex, without which our cities will soon collapse.
- Ragpickers earn less when cardboard, plastic and other recyclable material is covered with sambar and rotting papaya.
- Till ragpicking is a viable livelihood, we can at least help reduce

## SOME OF DAILY DUMP'S PRODUCTS



### URLI

The Urli is a multi-purpose container that can hold the composters or be used as a decorative garden/home accessory



### GAMLA

The Gamla is a modified potted plant. Plants surround the organic waste while decomposition takes place in the central pipe. Gamlas are ideal to teach young people about compost and as gifts to start people off.



### LEAVE-IT POT

The Leave-It Pot has been designed as a store and maturation chamber for semi-composted material that is generated in other Daily Dump composters like the Mota Lota and Patta Kambha. It enables you to use your composter in an efficient manner by allowing you to transfer the semi-composted matter into this Pot



### THE MOTA LOTA

The Mota Lota can manage large volumes of kitchen and garden waste without taking up too much space in your home. It has a traditional form with modular parts.



### A THREE-TIERED PATTI KHAMBA

The Patta Kambha is a store cum composter primarily for your garden waste. Usually dried leaves and twigs lie in an unsightly pile in a corner of the garden. The Patta Kambha stores these leaves and also composts them over time.



## INNOVATOR QUIPS: Poonam Bir Kasturi in a candid interview

### Before Daily Dump...

I studied industrial design at the National Institute of Design, Ahmedabad. There we had a very nice set of faculty... one of our professors there, Mohan Bhandari was a source of great inspiration and he taught us to think out of the box - we would sit under a tree and he'd say, "is it a tree? Is it a tree? Is it a tree?" I think we were very fortunate to have people like him teaching us.

After my studies at NID my father passed away and my family was in debt. It fell upon me to get us out of debt and I started building machine tools. Then I started a crafts design company called Industry Craft which is now called Mother Earth with another batch mate of mine and another lady who was putting in the money. That I got out after 5 years. Meanwhile I was also part of the founding that set up the design school in Bangalore, Shristhi. I taught there for 12 years.

### Influences

I think the major influences were all the major mistakes that other people make - take my dad, he was a really maverick guy, he left HMT which was a huge public sector undertaking at the time he was 40 and he set up his own design consultancy. As he tried to set up and run a business, I saw what broke him - I saw the fact that he had invested so much in some people and as it will happen in every such enterprise that who you train the most will leave and become a competitor.

I learnt from all those mistakes and I learnt how much he put into being creative and then I realised - large institutions were not the basis of really different thinking, they are not the crucibles that will hold.

We live in a culture where every thing is feudal - you want your boss to tell you to do the next things - you never think about what you are going to do yourself - why would you work then - why do human beings choose to work in that drudgery. You will find in a lot of our informal sectors - the chai guys, the guy with the rickshaw, crafts people - all of them have a sense of autonomy that you won't find with people working in the corporate sectors



or on government jobs. These guys have more time in their hands and they respond to different rhythms in life - at the end of the day when they finish their work they are done with it, here in the corporate life you are on call all the time just because they give you a fat salary.

I decided, boss, I will never go and join a corporate - I don't care if they give me three crores a year. First of all if I go and join them I will have a fight with them so then it is better for them and better for me to stay away. Then I will make peace with the fact that I don't want three crores in this lifetime. I am a poor person and I'm fine with it.

Some of the corporates - the big guys are messing up the country - they are messing up with the chemicals, they are messing up with the environment, they are not responsible - for what, because they need their pay cheques. They do not know how to work with creativity in India because they are so feudal - and creativity is about letting things evolve - it is organic - you cannot predict its outcome. Like for example - I took two years to come to a conclusion that Daily Dump is the best thing I should do - no corporate would have given me two years. They would not have - not in India...

And similarly I am trying to do some consultancy with a school on some creative curriculum - they feel that they like it - but when you tell them the process - and how

unpredictable the result will be - its not something that you can sit and make a report out of - and you can't sit and document it while it is happening - because when it is happening you are in it and that is how you create - no corporate wants to pay for that kind of a thing - it is very prescriptive - which means - at the end of the day I want this thing to happen.

### Daily life

I did not want to travel, (smiles) I am a big devotee of Ramananda Maharishi who said we don't have to travel anywhere - then don't. So my office is in my home. I also have been very ill the past 2 years; therefore, when I am good I work, when I'm bad I lie down, my life is very simple, very basic...

### Books at my bedside...

On one side I have Phantom, I love Phantom comics, and then I have a book that talks about how to deal with inadequacies, it is a book with lots of little essays - this guy he learnt a lot of Greek philosophers, somehow I forget his name. Then there other guys like Roald Dahl, Ricardo Semler...

### Future plans

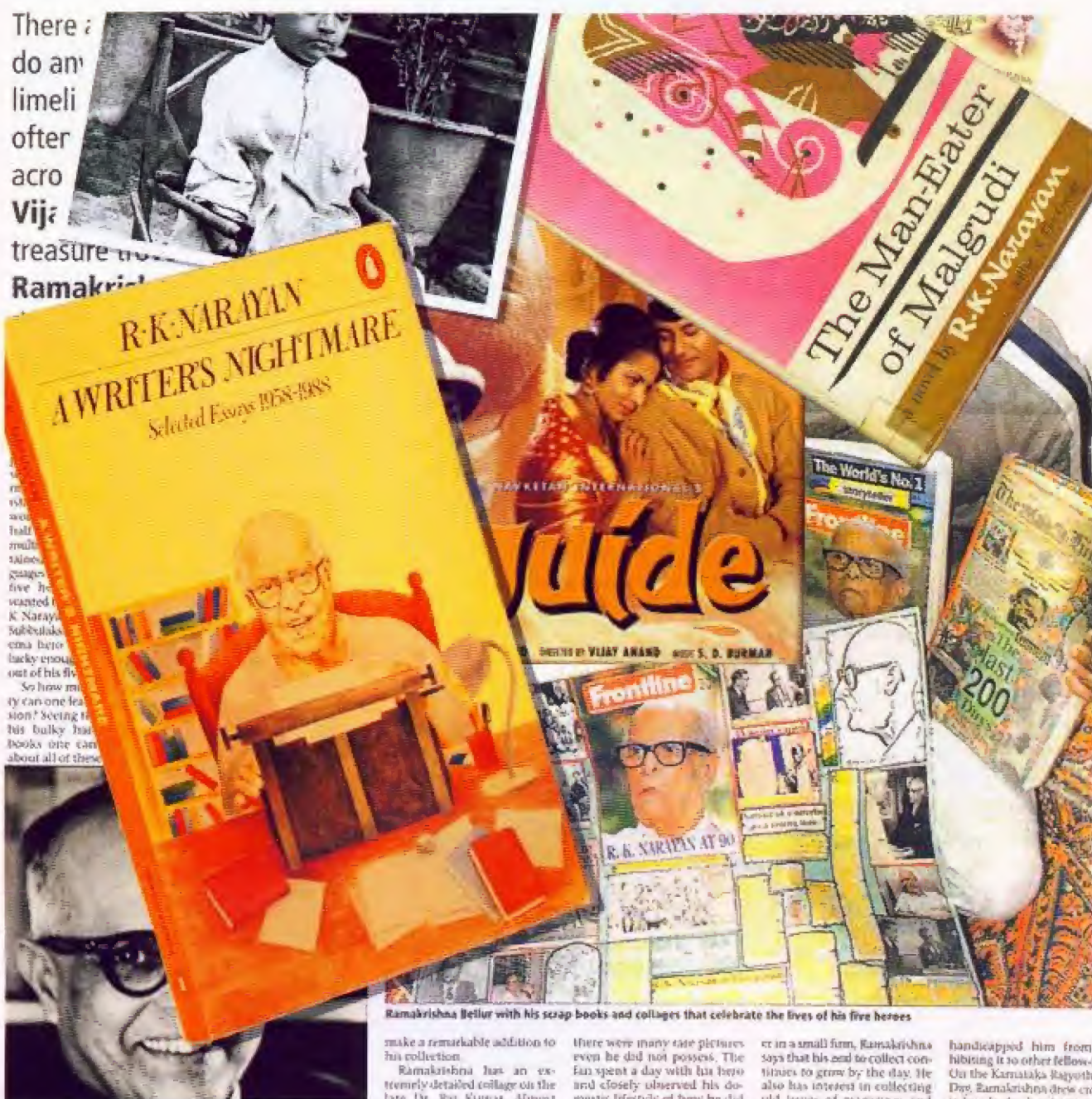
Now that Daily Dump is on auto mode and everyone knows what to do, my prayer is... I hope that in time some Marwari will find the money for Daily Dump - and if daily dump is a good business proposal, he will sniff it out... and once he does, and if we have built the right ecology at the back he can't mess it up too much - then we will need an exit plan. By then we should have done all the ground work necessary to keep the knowledge available and accessible to ordinary people to take action - that means the home owner (who is using these methods) must be empowered enough, that means it should not be too technical or jargonised or inaccessible to them.

Our next *jugaad* product is called *Manthan* - it is literally a sintex tank - which is on bearings and handles large amounts of waste... ■



# MALGUDI'S OWN MAN

"Narayan, with his glories and limitations," wrote VS Naipaul in *The New Yorker* (December 2006), "is the Gandhi of modern Indian literature." In a writing career that spanned over sixty years, RK Narayan (1906-2001) wrote a series of books about people and their interactions in Malgudi, an imagined town in South India. Malgudi brought to fore the humour and energy of ordinary life, and the compassionate humanism of Narayan's writing. Jayaprakash Sathyanurthy remembers the Narayan's work, and the influence it had on his own's life's course.



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Ramakri

So how many  
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sion? Seeing  
his bulky had  
books one can  
about all of these

Ramakrishna Bellur with his scrap books and collages that celebrate the lives of his five heroes

make a remarkable addition to his collection. Ramakrishna has an extremely detailed collage on the late Dr. Raj Kurnas. Almost

there were many rare pictures even he did not possess. The fan spent a day with his hero and closely observed his domestic lifestyle of how he did

it in a small firm, Ramakrishna says that his need to collect continues to grow by the day. He also has interest in collecting old issues of magazines and

handicapped him from exhibiting it to other fellow-fans. On the Karnataka Rajyotsava Day, Ramakrishna drew one in hundreds when he man-



Growing up as a south Indian brahmin, I should have had a fairly standard set of aspirations to choose from - the time-tested paths of law, engineering or medicine, and the subsequent drainage of my brains westward. Instead, quite early on, a new and vastly more intriguing possibility was added to these: to be a writer. Less glamorous than driving a fire engine and not as socially responsible as acting, but not without its own charms and merits, surely. Where did this broadening of options come from? To be fair, very few people in my immediate family have established themselves in the preferred professions. Only one of two grandfathers was an engineer, my father is a journalist, none of my uncles are lawyers or doctors. But most radical of all was a grandfather-like figure who frequently stayed with his granddaughter, my aunt, at my family's house in Madras. A dhoti-clad bespectacled man who liked to sit for long hours in the veranda, sipping coffee, reading the papers or just watching life go by. A man who earned his living making up and writing down stories. Writing, it seemed to me, was a very natural and even necessary aspect of human activity; stories surrounded us and it was only a matter of being receptive, of watching keenly as life transpired all around oneself, as my elderly relative did. Even now, as I realise that being a writer takes a little more than boyish ambition to achieve, I still believe that the telling of stories is a vital and integral human activity that everyone can and should participate in.

As a boy, I loved *Swami And Friends*, R.K. Narayan's first novel, best of all. Tom Sawyer and Just William were archetypal little boys of their own kinds; Swami was the one I could identify with the most. Not just because he was a little

Narayan's are not the books you should turn to for a stark portrait of India; they are even better. They have drawn equally on imagination and experience and become fictions that are truer to life than could ever be achieved through slavish realism.

south Indian boy - after all, he grew up in the 40s, an era very far removed in many ways from the 80s India that I grew up in. But Swami's character, his conciliatory spirit towards his friends, his unwillingness to be pushed too hard at school, his tendency to get carried away by the spirit of the moment - these were qualities I could understand and relate to. He wasn't a rough, boisterous boy given to physical pranks, prematurely drawn to girls and driven to great adventures. He was just an ordinary Indian schoolboy, but writ large. As I grew older, I came to appreciate Narayan's novels, with their more grown-up concerns and notes of tragedy amidst the fun. Still, I always find myself turning back to the Swami stories and to Narayan's delightful, early short stories, with their blend of absurdity and poignancy, irony and compassion.

What applied to Swami applies to all of R.K. Narayan's fiction; Malgudi is south Indian small-town life in a hazy 40s-through-60s milieu, writ large. But that's not all it is. Among worlds of the imagination, perhaps it is best compared not to Wodehouse's eternal Edwardian twilight but to Tolkien's Middle-Earth, an eternal world of the imagination which is somehow at the same time the world we all live in, wherever we are

from and whoever we are. Much is made today of stories that speak starkly of the author's unique experiences; of stories that bear some sort of seal of authenticity, that give us a living picture of what it means to come of age in the metropolis, to face racial conflict in Africa, to be Jewish in Brooklyn, to have a different sexuality from the majority of one's peers, and so on and so forth. Narayan's lifelong immersion in a way of life that he was born into, conversely, is somehow seen as a limitation, as if the experiences of a south Indian brahmin in the 'triangular boundary' of Madras, Mysore and Coimbatore is somehow less privileged with the stamp of hard-won authenticity.

This is a remarkably myopic view to take. When the hype and hoopla of twittering politicians, gun-running Gandhians, cellphone sex scandals and facile e-industrialisation is disregarded, it rapidly becomes clear that human nature has changed very little. There are people who find all of life in Dickens' works despite not being Victorian-era Britons. Narayan's stories have a similar grasp of what is universal in people. For all his immersion in a particular social context, Narayan's are not the books you should turn to for a stark portrait of India in the second half of the 20th century; they are even better. They have drawn equally on imagination and experience, and become fictions that are truer to life than could ever be achieved through slavish realism and the demands of fleeting relevance. ■



JAYAPRAKASH SATYAMURTHY  
I live in Bangalore with  
his wife, two dogs,  
several cats and a  
ridiculous number of  
comics. He is a writer.  
His blog is

<http://asahtooey.blogspot.com>



# HINTERLANDS OF HIGH SCHOOL MATH (PART 2)

In Part 1 of 'Hinterlands of Highschool Math', Dhananjay Joshi talked about what it was like to give up a high-flying corporate career to teach Mathematics in a North American highschool. Twelve weeks later, a status update from his classroom...

**T**he announcement comes loud and clear on the classroom speaker. "This is a lockdown. Teachers are requested to lock the classroom and no students should be allowed to leave the classroom. No passes are to be given. This is until further notice. Do not leave the classroom even if the period ending bell is heard."

I lock the room. Students tell me to turn the lights off and stop teaching (I am sure they like this part). We are supposed to be quiet. No one knows what is going on. Texting is now in full force. I ask some of them, what is

going on? I have not had this experience before. I am more than a little concerned. One student shows me a text he has received: "Gun shots". I ask where. Texts are going back and forth. We hear dogs and police in the hallway. My students try to climb the cabinet ledge and look outside. One of the administrators sees them and barges in the classroom and tells them to "SIT DOWN".

This goes on for two hours. We are in the classroom. Some of my students are actually taking a NAP! The topic for the hour was

Congruent Triangles. What I see and feel is nowhere near any congruency.

Next day we have a test. No one talks about what happened yesterday.

It is three-fifteen. I have completed my last class for the day. It has been a good day. No disruptions and no major shows of disrespect (This means I have not heard any f-words in the classroom). It has been a day to be counted as a blessing.

I gather my stuff and I walk towards the parking lot. I see the principal on the way. He says hello and we walk a



few steps together. All of a sudden his intercom chirps, he drops whatever he has in his hand and runs full speed to the parking lot. I see the security in yellow jackets running as well. I stop and turn back and go back to the teacher center. I don't want to know.

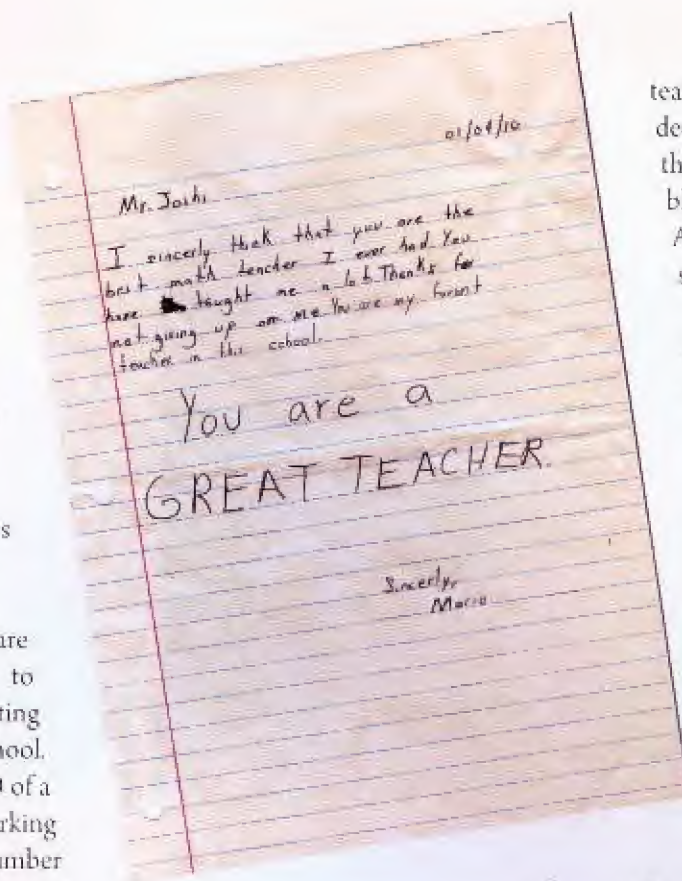
That night our school makes the TV news.

"Police and school officials are reviewing video tapes to determine who was fighting outside a north suburban school. Police received a call at 3.20 of a large fight in the school parking lot. When they arrived a number of people fled the area. There could be criminal charges. Examination of the footage is still going on."

The number one ranked my high school basketball team loses the game next day as three key members of the team are suspended for being involved in the fight.

I am thinking "forces". What is it that drives teenagers act this way? Are they in school because there is no other place for them to go? What does Education mean to them? Geometry is a meaningless word. Who cares about congruent triangles when survival is more important?

One of my students comes to me and shows me his gang tattoo. He says, Mr. Joshi, I am going to turn my life around. I am not going to do this no more. I offer him help and say that he can come and talk to me any time. Another student comes after the end



of school and says, Mr. Joshi, thanks for not getting mad at us. You are very patient. I shake his hand and say, "Any time, ok?"

I cannot get away from the nagging thought about "forces". A student has missed classes for two weeks and the final. I ask other teachers. They say he has troubles at home. His estranged father has been trying to kill his mother. My heart weeps. I will offer him make-up opportunity when he returns.

Another student who has missed the final has not been in class. I call his mother. He is in jail for attempted burglary. His mother works for the police department. I cannot offer him an opportunity even if I want to. My heart weeps for him too.

I reminisce about my Nutan Marathi days. I cannot sleep as I remember my

teachers and their love and dedication. I remember touching their feet and asking their blessings when I came to America. I am drawing upon the strength those blessings now.

So, who is helping who? No child Left Behind? The school administrators are saying the NCLB is undergoing changes under Obama. But all that is at a level that is invisible to the children I see.

I want them to feel and smell success.

They may do basic mathematical operations right but what if they cannot read the test? I spend my night hours making sure I compose my tests so that they are comprehended and understood. One girl who has never gotten a good grade in Math is getting a B. I show her results. The smile on her face is priceless. She takes the paper to show it to her special education instructor. She says, I want to show her that I do know something.

I say, go ahead. I receive a note in my mailbox. It says thank you for not giving up on me. ■



CHANANJAY JOSHI is a teacher, statistician, mediator, and poet who loves to read. He is an idealist and can only do one thing at a time thanks to the years of Zen Buddhist training. He has no plans beyond the present moment. The big question is, how do things get done? He thanks his wife and daughters.



# PROJECT POINTLESS

In New Delhi, a rainwater harvesting 'school project' may be bought, materials included, for Rs. 500. Hari Batti talks about a disturbing trend in our schools - and why it ought to make many people, including environmentalists, sit up and take notice.

Text: Hari Batti  
Photos: Mindfields Team

I walked into a south Delhi market this summer and saw the sign on the right. The 16 year old girl selling me my Airtel recharge coupon told me that she would happily make a rain water harvesting project for my children. The price? Five hundred rupees, including all materials. (She'd do the balance of their holiday homework for another 500 rupees).

Apparently most ninth standard students in Delhi are assigned a rainwater harvesting project at some point during the year, and this girl knew an opportunity when she saw one; business was good, she said.

I was pleased to hear that so many Delhi schools are teaching about rain water harvesting systems. I was sorry to hear that many students are buying their way out of the assignment, though I suppose this should have come as no surprise; there are many shops in Delhi offering essentially the same services.

This, along with the half-yearly exams my own children suffered through in September, has got me thinking about the state of our schools. And the truth is, I think they are in a very sorry state.



The exam system is part of it: students are rewarded for regurgitating content, not for their ability to solve challenging problems or to express new ideas. But the exams are only part of the problem. I'm no expert, but let me give you just a few examples of what's wrong with schools today—and why those who care about the environment and justice should be worried.

#### Reading:

When was the last time your child read a real book in school, or was asked to read a book at home? Mine almost never are. Instead, they mug up stories from a thin reader that they mostly read before the first week of class is over. Why does this matter? Reading is a form of thinking, and you can't read or think well without a lot of practice. The more you read, the more ideas you are exposed to. Most of us learn to read well in spite of what happens in school, not because of it. The funny thing is, this doesn't have to be painful: research suggests that "pleasure reading" is not only fun—it's good for us!

#### Writing:

When my child was in fifth, he was told he needed to improve in three very important writing genres: application for leave; telegraph writing; and notice writing. When I asked his teacher why these genres were important for 11 year olds to master, I was told, "Ah, but they need to learn them for the tenth boards." I smiled and nodded. What else could I do? But the truth is, if our children spend five years learning how to write a proper telegraph, then we are in



If our children spend five years learning how to write a telegraph, then we are in trouble. We need to teach children to write things that actually matter to them, because that's what good writers do.





deep trouble, indeed. We need to teach children to write things that actually matter to them, because that's what good writers do. (Future employers, relax: if you ask a good writer to write a notice or a telegraph in real life, she will figure out how to do it properly in no time.)

#### Maths:

Our students spend an extraordinary amount of time learning how to solve problems that involve very large numbers. This looks impressive, but requires very little thought: once you learn the "right way" to solve such a sum, you just plug in the numbers. Pity the child who tries to find an original path to a solution. And since we spend so much time teaching computation, there is very little time left to teach children other important

things like how to read graphs and interpret data. Yet without a strong foundation in statistics, children will never grow up to be adults capable of understanding what is really happening in the world of science,

None of these ideas are new. And some of them are easier to implement than you think. But realistically speaking, real educational reform is not going to happen quickly, so if you've got children, you've got your work cut out for you.

politics and the economy. In fact, a poor grounding in statistics is partly why so many people actually believe we are entering into a period of global cooling, in spite of the overwhelming evidence to the contrary.

#### Holiday Homework:

Many schools assign homework over the summer holidays. This often involves "projects" like the rainwater harvesting project I mentioned earlier. The problem is that even here, the emphasis is on how the product looks, more than it is on the thinking that went into it. Hence, parents (or enterprising 16 year olds) end up doing much of the work involved in these projects. And students too often learn nothing but the value of neat presentation.



My son's school once invited parents to a display of summer holiday projects on the subject of "our environment". Students stood next to their projects and recited mini-speeches upon request. For example: "Sir, this is a hut next to a river. You see there is no sewer so the river becomes polluted. We must keep our rivers clean. Thank YOU!" When I asked this student what was to be done to clean the river, short of moving the hut, I got a blank stare. This kind of thing happened time and again.

We are living in a world that will present our children with enormous environmental, political and economic challenges. Climate change, water shortages, failing farms, and, yes, polluted rivers; these and many other problems threaten to make an already difficult situation much, much worse. Memorizing huge amount of information without thinking about it, doing things for show only, buying their way out of difficult assignments--none of this will prepare our children for the world we are leaving them.

So what are we to do? In the long run, we need to advocate for a system of education that values learning over marks on exams. Democracy cannot function well if people of all classes are not taught to read, write and think effectively, so it goes without saying that efforts to reform education should not be limited to schools for wealthy children.

This is not the place for detailed proposals, but let me make three brief suggestions. First, let's not

In the long run, we need to advocate for a system of education that values learning over marks on exams... And we should advocate for exams that measure learning rather than short term memory.

rely on the idea that providing a computer to all villages will solve the equality problem. A few books, a free lunch and a well trained, caring teacher who shows up every day are worth more than a dozen computers. Second, we should support efforts to decrease testing in general. And we should advocate for exams that measure learning rather than short term memory. Finally, all children should be given opportunities to write about things that matter to them. If we give them opportunities to share the resulting stories, essays and poems with an audience that consists of more than their teacher, that is even better.

None of these ideas are new. And some of them would be easier to implement than you might think. But realistically speaking, real educational reform is not going to happen quickly, so if you've got children, you've got your work cut out for you. In many ways, I think it makes sense to start with reading. First, read to your children; then later read with them, and finally

and always show them you also are a reader.

Of course it also makes sense to advocate for change within your child's school and within the larger system of education. But being an advocate is a big job, and you may feel unprepared, as I often do. To address this, you can explore the net. There's a really thoughtful discussion about the alternative schools here, though I wish there was more in it about Delhi schools.

For the big picture, try reading Mindfields, "the journal about ideas and alternative education." I've read a few issues and I like what I see. They seem to be asking the right questions and moving the discussion forward in healthy ways. They aren't trying to sell you on one particular school, but they are strong advocates for the kind of alternatives we need. And they give examples of schools that are doing wonderful things. Mindfields says it is a magazine that "is invested in education for its true purpose: educating children as opposed to building empires." To me, that sounds like a pretty good place to start. ■





# AN ERA OF FIRESTARTERS

Ahalya Chari is an educator whose career has spanned 65 years. For many decades, she was the force behind numerous schools, colleges and several institutions in India, including the Central Institute of Education, the National Institute of Education, the Mysore Regional College of Education, and the Krishnamurti Schools. Ahalyaji's extraordinary career in the field of education has also been an inner journey through the many meanings of life.

Text and Photos: Shagufta Bhardwaj

Today, at 88, Ahalya Chari feels that work has a central place in life. Her day begins with quiet watching, reading and contemplation in the serene environs of Vasant Vihar, the Indian headquarters of the Krishnamurti Foundation in Chennai. As the day progresses, she meets people from different walks of life who come seeking her guidance. On certain days she prefers quiet solitude for reading and listening to music. Ahalyaji is not new to appreciating the value of maintaining a fine balance in life. She has striven for it in all her many years.

Born in Rangoon in 1921, Ahalyaji belongs to the third generation of Charis (Tamil brahmins settled in Burma). Her father was sent from Rangoon to study at the Central Hindu Boys School and College that Dr. Annie Besant had started in Benaras in 1898. After finishing college, he returned to Rangoon to teach at the Theosophical Society that had sponsored him and where he would go on to serve as headmaster. Ahalyaji's mother, who married at 16, completed her studies after marrying and raising children.



Ahalya Chari has spent her entire life in the field of education and continues to do so even now in Chennai, as a trustee of the Krishnamurti Foundation.

Ahalya Chari at her home in Vasant Vihar, New Delhi



Ahalyaji first attended an English-medium convent school for girls. Growing up far from her grandparents' homeland, of which she knew little, and studying in a British-run school, she learned important life lessons. Her school laid emphasis on discipline and rigour in every aspect of life, qualities that she continues to sustain in herself even now. British schooling also gave students a love for purposeful learning. The atmosphere at the Chari household also affirmed integrity, truthfulness, purposeful study and space for affection and goodwill - "It was natural for us to follow, to obey and not to question the generation that laid down the law," Ahalyaji told me.

After moving to her father's school in Grade VIII, Ahalyaji came in contact with the universal culture that the Theosophists believed in. "Unconsciously, we were brought up in a way that is today called a secular atmosphere. We believed that people of all faiths and all nations should live together." Despite a secular conditioning, Ahalyaji and her friends had no political consciousness: "We were not conscious that we were Indians, living in Burma ruled by the British, or that we were slaves of an empire!"

Growing up in early 20th century Rangoon had its share of fun moments. "I remember the first time I heard the radio ... The first voice that came out of the radio was that of the King Edward VIII abdicating his throne for wanting to marry the woman he loved. And we all sat listening to his speech. I heard my father at the end, feeling glad that



Dr. Annie Besant (Front, second from right)

**In Grade VIII, Chari came into contact with the universal culture that the Theosophists believed in. "Brought up in what is today called a secular atmosphere, we believed that people of all faiths and nations should live together."**

England had stood by its principles. I was saddened that someone had to do this, but I could not raise my voice or any questions," she says.

With new technologies making their way from the West to the colonies, the young in early 20th century Burma witnessed a life no different from one across the ocean. Young Ahalyaji and her aunt would go out to watch silent movies like the Charlie Chaplin films. Then, in a movie called Shirley Temple Curly Tops, a young girl on the screen started speaking. The awestruck audience got up and started clapping when they heard her speak on the screen. That was the first transition

from a silent movie to ones that had dialogues we could hear.

There were also excursions to the countryside and to several Buddhist temples, or Pagodas as they are called in Burma. "We used to light candles, sit down quietly and pretend to meditate".

Ahalyaji's first brush with her identity as an Indian came when she was about 12. She attended a ladies' meeting with her mother in Rangoon. A strange, half-naked man with a broad smile shocked her young eyes. After his speech, for some unknown reason, many of the women took out their bangles and their ornaments to give the old man, who was holding out a piece of cloth. To Ahalyaji's utter disbelief, even her mother put in some money! That was Mahatma Gandhi. Ahalyaji reminisces, "On our way back home, I asked my mother who this poor Gandhi thatha (grandfather) was and why did women give him so much money". My mother explained that India was a colony of the British and it was struggling for freedom. Upset, I asked my mother, "why must the British leave? ... They are so nice and I don't want my teachers to leave."

At the University of Rangoon, Ahalyaji studied English, with History as an ancillary. Some unrest in India had already penetrated into the minds of youth, even in Rangoon. She recalls Jawaharlal Nehru's visit to the University, where he spoke to a captivated audience. She participated in several debates on non-political subjects like co-education and social reform, with other fiery students. Among these was Aung San Suu



Kyi's father, Aung San, who was two years her senior.

In 1941, just after she had finished her Bachelors, the Third war came to the East. The Japanese were threatening to invade Burma. Despite months of preparation, when incendiary bombs fell on homes, no one knew what to do but run. The Chari family spent the next four months running from one place to the other in the interiors of Burma, moving by train, cart and even walking: "We never took life for granted after those years on the run."

Finding their way to a refugee camp at Shwebo, they were spotted by an old student of their father's, who kindly helped them get evacuated by air to Calcutta. From there, they went to Benaras, which was the only place in India they knew.

After shifting to India, Ahalyaji's subsequent years appear well-planned in retrospect. But, as she says now, "I just flowed with life. I never planned or applied for a single job or position." In Benaras, Ahalyaji finished her Masters at Benaras Hindu University. Soon after, she was offered a job as Lecturer at Vasanta College for Women.\*

Ahalyaji had grown up seeing Mrs. Besant's photo on the mantelpiece at her family home in Rangoon, but recognized Mrs. Besant's extraordinary life and contribution to Indian education only after working as an educator. Ahalyaji says, "She wanted to give a spiritual regeneration to the country through education and wanted the Indian spirit to be uppermost in our schools; which, for her, meant being not



Pandit Jawaharlal Nehru

The unrest in India had penetrated into the minds of youth, even in Rangoon. Chari recalls Jawaharlal Nehru's visit to the University of Rangoon, where he spoke to a captivated audience.

westernized but learning English, being open and liberal and learning Sanskrit and ancient Indian philosophy, history and the deep-rooted Indian traditions of no competition and no fear..." Ahalyaji's job here was an excellent beginning for a teacher who was to discover that teaching was indeed her calling.

The waves of progressive education in the west and corresponding developments in India made way to Vasanta College. The college laid emphasis on universal mind and values and, as far as possible, no competition. For Ahalyaji, her time in Benaras was a very special period in her life's journey, when she absorbed influences from various concurrent academic, spiritual, progressive and cultural movements of the 1940s. She

served Vasanta College for 10 years, making most of her time as an educator-teacher and house parent, to grow intellectually and spiritually.

Amongst other interesting colleagues and friends Ahalyaji met at Vasanta College, was a man who influenced her profoundly. Young Ahalya had grown up seeing his photograph on the mantelpiece of her house alongside Mrs. Besant's. By now, away from the tutelage of the Theosophical Society, J. Krishnamurti had taken the world by storm.

At Rajghat, Ahalyaji realized the balance to have alertness as well as sensitivity to understand a child and understanding the young individuals as an ongoing learning experience. Discussions on freedom, intelligence, transformation, responsibility and order helped her see a new side to living and uplifted her. The teachers and students were encouraged to approach nature and the world around them with extreme care and sensitivity.

Unfortunately, India between 1942-48 was in great turmoil. Ahalyaji and her colleagues were inwardly challenged by the wave of Indian nationalism that surged around them. She remembers listening with rapt attention to the stalwarts of the times - Gandhiji, Jawaharlal, Sarojini Naidu, Sardar Patel and so on - and getting emotionally charged. In 1947, she and a few friends were in Delhi to hear Nehru's famous 'Tryst with Destiny' speech on August 15th. It was thrilling to see the tricolour go up. But there was also the anguish of partition, the killing of innocents, death and destruction unimpeded.





Old Delhi in the 1950s

Delhi in the 50's and 60's was to see a resurgent India, a new creative wave of life could be discerned in every sphere of life. Creative energies flowed into the discovery of Indian art and culture.

She was a witness to war and violence once again. They came back to Benares wondering what freedom was all about.

It was at that point in January 1949 that J.Krishnamurti came back to Benares after the war years. Listening to him for the first time, she was shaken to the roots. "Can't you see that nationalism is poison?" he asked his audience. 'Is not war of any kind evil? And are you not responsible for war? Are you free from violence within you? Are you not like the rest of mankind?' They sounded harsh at first, but coming as they did from a source of great sorrow and compassion, the teacher held us in spell," she reminisces. After that there was no turning back. She knew he was the teacher she had yearned for.

Her passion for education kindled by the wonderful initial training she had had as a teacher in Benares was even stronger after listening to Krishnaji, and so in 1951 she went to Delhi in search of new pastures.

Delhi in the 50s and 60s was to see a resurgent India; a new creative wave of life could be discerned in every sphere of life. Nehru's passion for creating a scientific temperament within India saw the emergence of many national science laboratories. Maulana Azad as the Education Minister pledged to bring about a new direction to education. It was his vision that helped set up a pioneering institution for the education of teachers. He appointed Prof. Ananthnath Basu, who had had his training under Rabindranath Tagore, as the head of the new Central Institute of Education in Delhi.

And it was to this institute that Ahalyaji went, first as a student in 1951 and, after a stint in the US, as a Fulbright fellow, to quench her thirst for what was new in educational philosophy then in the west. She joined the Institute as a lecturer after two years and was engaged for a couple of decades in the education of teachers. The Institute's ideal of a teacher's role being much larger than that of a mere transmitter of knowledge in a school was rather unique. It stood for giving attention to the whole life of the child and the

creation of an atmosphere of participatory learning. Today, Ahalyaji feels that most colleges of education do not carry the same spirit any longer but have become commercial entities.

The 50s also saw creative energies flow in the discovery of Indian art and culture in many ways. Women like Kamala Devi Chattopadhyaya and Pupul Jayakar revived our traditional arts, crafts and textiles. There was renewed pride in the extraordinary skill of the craftsmen and artisans in Indian villages.

In the early 1960s, USAID (along with consultants from Columbia University) came to the C.I.E for discussion about starting what later came to be the NCERT. Ahalyaji found this to be an exciting venture and became one of the initiators of the National Institute of Education (later NCERT). Ahalyaji recalls how she and her colleagues of that generation had worked hard to set up this institution and dreamt a new dream for India. That was also the time when the Centre and the States could work together, exploring possible areas of improvement.

Around the late 1960s, four regional colleges of education were set up by the government of India at Bhubaneswar, Bhopal, Mysore and Ajmer. The focus was to train future teachers. Ahalyaji was asked to join the Mysore Regional College of Education as principal.



At NCERT/NIE, Ahalyaji headed the Curriculum Department, where she prepared all the textbooks. "My team and I went around to all the states, communicating with the directors of education and training teachers, in the new ways of looking at curriculum and textbooks. It was tough work." Ahalyaji worked with the NCERT for seven years, from 1962-69.

In 1961-62, she spent a year at Edinburgh University, training for a course in applied linguistics. Returning back to India at the NCERT, she started working on mother tongue learning and English learning projects: "I felt that unless reading skills in these two languages were established, there would not be much of an understanding of other subjects later. Reading was never encouraged in our country; the practice was to learn by heart." With this challenge, Ahalyaji and her team started a reading project. They traveled all over the field before writing books and preparing material. The team came up with reading-readiness material for pre-school, so that a young mind could get ready for reading.

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Just when Ahalyaji was deeply into teacher education, she was asked to take charge of building the Kendriya Vidyalayas that had been set up by the Central Government. She

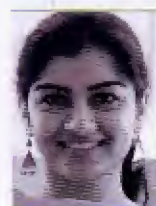


*She was eager to work with Krishnamurti, having listened to him for long decades, having participated in small discussions, and having walked with him some way.*

confesses that, initially, there was great resistance to this idea for such vast administration would mean dealing with files and sitting in an office. But she was soon to discover that behind each file was a human problem. Also, a cabinet resolution signed by Pandit Nehru, indicated a much larger opportunity when it read "these schools are meant to be not only conveniences for transferable central government servants offering a common curriculum but should also be recognized as opportunities for developing an all India mind in children". This gave much more meaning to the work. It was possible to visit schools, and interact with principals, teachers and children, to inculcate a spirit of oneness. Ahalyaji said that it was great to see a major general's child sitting alongside a jawan's, or a group of children from Manipur performing a folk dance in Trivandrum. Such is the variety in our country that schools of this kind have a much larger role to play and indeed even now they do.

Why then, I asked, did she want to give up all this to go to the Rajghat Education Centre at Varanasi, at this point in 1973? She paused for a while and answered that the decision came very naturally and was in fact the right one to take at that point of time. She was eager to work with Krishnamurti, having listened to him for long decades, having participated in small discussions, and having walked with him some way. There were fundamental questions that needed to be addressed and the ambience of the Krishnamurti centre seemed the right place for her to engage in this.

Ahalya Chari has spent her entire life in the field of education and continues to do so even now in Chennai, as a trustee of the Foundation. Immediately after my discussion with her, she met a group of teachers and asked them questions about their own experiences, their challenges as teachers, and about the school as a whole. Her questions to each member of the group inspired a soul searching on our part. "Do you feel that this is worthwhile? Is there a spirit of enquiry in your own lives and in what you do at school? Have you understood what freedom is all about in a school? Where do you draw the line? and so on..."■



**SHAGUNIKA SOODHI** is a cultural historian, advisor and educator. Leads Sunday walks to heritage sites for the India Habitat Centre. Can generally found in the narrowest lanes leading to the oldest havelis in Delhi.



# RECOMMENDED READING

Text: Aravinda A.



## FRAMED

By Frank Cottrell Boyce  
HarperCollins  
Pages 320



For a few months now, every time I trawled the web, Frank Cottrell Boyce was a name that kept popping up and finally we picked up some of his books for the library – Cosmic was one and Framed, another. I recently read Framed and it's one of those books I'll remember for a really long time, for many reasons, one of which is that it's such a great story.

It's set in the Welsh town of Manod, a town grey and rainy with the mountain of slate right up there, a mountain that's "inside out" – go figure! Dylan Hughes, resident of Manod, the only boy in town, and keeper of the petrol log at the family gas station tells the story of the town, her people, his family and himself. There is something rather bleak about Manod especially when you see that

poor Dylan has no one to play soccer with anymore and people are all moving away in search of jobs. But Dylan sees in his hometown, what others fail to – beauty! Perhaps that's what *Framed* is about.

In a nutshell, what happens in this book is that due to floods, the National Gallery in London has to hide its priceless collection of paintings. The powers that be choose Manod. When Lester, the man-in-charge of these rare and precious works, stops at Dylan's for gas, he happens to overhear the boy refer to the chickens as 'Donatello' and 'Leonardo' – named after the Ninjas of course. But Lester, the connoisseur of art doesn't know this and believes that hidden away in this grey town in Wales, a town with no signboard for itself, is a boy with the eye.

Dylan is not stupid and catches on but not before all that art is unleashed on him and his townspeople, setting free a series of events that are sometimes out-of-this-world, sometimes touching and often laugh-out-loud funny!

*"Do you think we might be talking about different Michaelangelos?"*

*"I think we might."*

The humour is so right and the story is so fantastic, and it somehow brings fine art and artists closer to you without one expecting it. It's a great 'family' story. Frank Cottrell Boyce has seven children. I don't know why but that piece of information appears every time I google the author. I share it here, so you got it from me first!

## THE GRASSHOPPER'S RUN

Siddhartha Sarma  
Scholastic  
Pages 208



A debut novelist, a book set in the Indian northeast, a story of a boy who sets out to avenge his best friend's murder, another side of Indian history from the early 20th century, that's *The Grasshopper's Run*.

It is set in 1944, when the Japanese Imperial army invaded British India from the northeastern hills. Against this backdrop forms the story, which begins with a massacre in a Naga village by the Japanese. The dead include young Uti, the grandson and heir of the Ao Naga chief. The perpetrator, Mori, is identified and Uti's grandfather sends his men out to avenge this death. Joining the group is Gojen Rajkhowa, Uti's best friend. As he walks side by side with the men of the tribes, he learns about the differences between them and the similarities. There is a lot of old wisdom told through the conversations among the men,

*"When you hunt, you are placing your hunger against the animal's desire to live. If your hunger is greater, you will get the animal. But not always."*

Gojen makes his way through the jungle,



with the other men, sniffing out his prey and keeping out of sight of the British army who are also after Mori. His instincts and all that he has learnt so far are put to test as he approaches closer to Mori.

It's a meticulously researched book with vivid descriptions. Yet, it's not really a heavy tome, which is something of an achievement when there is so much historical information to add. Yet, it does not rely on history to see it through. Importantly, the story of Gojen's journey from start to end is not eclipsed by the background details. Nor is it padded with angst, anger, and audible sorrow. The emotions are worked into the legends of the land, stories of childhood and remembered snatches of memories, which is probably what makes it so readable. And it tells a story we haven't heard before.

*The Grasshopper's Run* in my opinion marks the coming of age of historical fiction in India, perhaps even a coming of age of novels for the Indian teenager.

## THE ARRIVAL

Shaun Tan  
Arthur A. Levine Books  
Pages 128



This book was so strongly recommended that I ordered a copy for myself. And what a book it is! A hardback, all illustrations-no words wonder, it has already found a place among the great books of the world, if you ask me.

The *Arrival* is about immigrants, displacement, nostalgia, a sense of belonging in an alien world... and all of those emotions and layers that go with moving away from home. And what Shaun Tan does is create a visual imagery that is not a straightforward telling of a story but rather a stylised and detailed series of sketches that are so strong and so compelling. Entire conversations are depicted via pictures wordlessly. It is a long journey that one makes from arriving in a new place and making it one's home. And *The Arrival* draws out that journey in so many ways – the bigness of things unfamiliar and the joy of finding the familiar, the loneliness and the suddenness of companionship, among other things.

The author mentions on his site that he chose not to use words as the pictures "invite a more lingering attention from the reader" and that is especially true here. It does make you slow down and pause and follow the nuances, which is an incredible achievement. The *Arrival* will without doubt resonate with most of its readers.

The author's note mentions that it is inspired by migrant stories from various times and places, including that of his father who emigrated to Australia from Malaysia.

PS: While on the topic of displacement, I take this opportunity to write about two books authored by me. Released in 2009, *Dorje's Holiday* at the Gyenso Khang and *Dolma Visits the City* were written to mark the 50th year of Tibetan life in exile. The books are in English, illustrated by Chime Tashi and published by an indie imprint, Lama Mani Books. If interested, do email [info@thinktibet.org](mailto:info@thinktibet.org) to place an order. ■



## THE GOOD READING GUIDE

1. *Like Cats* by Anushka Ravishankar (3-5 years)
2. *Listen to My Body* by Noni (3-5 years)
3. *How the Kangaroo Got his Jump* by Rudyard Kipling, retold by Heather Adams (5-7 years)
4. *Aakoo Maloo Kaloo* by Vinita Krishna (5-7 years)
5. *Mr. Jeejeebhoy and the Birds* by Anitha Balachandran (5-7 years)
6. *Dear Mrs LaRue* by Mark Teague (5-7 years)
7. *Tashi* by Anna and Barbara Fienberg (7-9 years)
8. *The Veena Player* by Anjali Raghbeer (7-9 years)
9. *Avoid Sailing with Francis Drake* by David Stewart (7-9 years)
10. *Chachaji's Cup* by Uma Krishnaswami (7-9 years)
11. *Framed* by Frank Cottrell Boyce (9+)
12. *The Diary of Ashoka: the Great* (9-12)
13. *The Adventures of Mowgli* by Rudyard Kipling (introduced by Ruskin Bond) 9+
14. *Scat* by Carl Hiaasen (12+)
15. *The Grasshopper's Run* by Siddhartha Sharma (12+)
16. *Click* by various writers (12+)
17. *And Another Thing* by Eoin Colfer (12+)
18. *Cross Cross* by Lynne Rae Perkins (12+)
19. *The Arrival* by Shaun Tan (for teachers)
20. *Curiosity Killed the Cat and Other Animal Idioms* by Bindia Thapar (for teachers)



### ARAVINDA A.

Joined Hippocampus to be around books. Likes writing and tries to earn a living from it. Loves the company of dogs. Agrees completely with the anon Zen master who said, "I never got lost because I don't know where I'm going."



## BIPAN CHANDRA GIVES LESSONS ON HISTORY BOOKS

New Delhi:

The next edition of the World Book Fair will have a special section on history, eminent historian and chairman of the National Book Trust (NBT) Bipan Chandra has said. The scholar also has clear suggestions on the type of history children should be exposed to.

"I want to devote a separate section to historical books for children aged between 7 and 10," the chairman of the NBT, which organised the week long 19th World Book Fair that ended on Sunday, told the sources. Chandra thinks children should read two kinds of history and he suggests a few models.

"Children should first learn about historical personages like Mahatma Gandhi, Jawaharlal Nehru, Subhash Chandra Bose, Akbar and Ashoka. And they should also know about the socio-cultural evolution of India. As a boy, I was bred on writer Shrovan Kumar's books. Why should we not publish them again? But the books must be written in a way that every child enjoys reading them. No child would like a history book that cannot be enjoyed," Chandra said.

Students of class XI and XII should read about historical development, the former professor of modern history at Jawaharlal Nehru University (JNU) said. "I would recommend 'Medieval India' written by Romila Thapar for National Council of Educational Research and Training (NCERT) and 'Contemporary World History' by Arjun Dev to students of Class XI and XII as model textbooks. It is a different matter that these books were discontinued a few years ago. But these books were written in a childlike way and yet packed in serious content," the historian said.

"Thapar's 'Medieval India' presents a

balanced and realistic picture of Indian history", Chandra said. "Most of the historians have their own biases, but it must not influence the portrayal of history. However, no human being can rid himself of bias," he said, replying to a query whether the kind of history taught to Indian students was "free of political perceptions of events." It becomes the historian's responsibility to present the real story, he said.

## STEPS TOWARDS GENDER SENSITIVE SCHOOLING

New Delhi:

Four years ago, the National Council of Educational Research and Training, a premier educational institution, laid down a new curriculum, radically changing the content of textbooks, particularly in social sciences, in Indian schools. But researchers and policymakers say schoolteachers, woefully lagging behind in their training, are not doing justice to gender-sensitised textbooks.

Teachers' training is a huge limitation in the way of properly implementing the new curriculum. The curriculum has changed but the Bachelor of Education (B.Ed) syllabus has not. The teachers' training institutions are neither equipped with an upgraded, gender-sensitised curriculum; nor are the trainers familiar with the new concepts. While lessons have been drawn up within a feminist perspective, the teachers who have to explain it to the students, have little or no understanding of it.

From the 1970s an effort began to overhaul the stereotypical gender images. In alliance with Delhi University's Women's Study Centre, the NCERT laid down gender-sensitisation guidelines in the 1980s. The educational system turned a page in 2005 when NCERT rectified the chronic gender flaws in textbooks, at least in some of the disciplines. Prior to this textbooks carried stereotypical images of women -

portrayed mostly as cooking, washing, doing domestic chores. Men were shown active, engaged in the world outside. Following the curriculum changes the NCERT textbooks for the 7th grade have woven gender into the larger framework of day-to-day life. For instance through narratives, comic strips among other forms, the textbook puts women in relation to India's constitution, its media, minority populations, dalits, the lowest in India's caste hierarchy.

## UNIQUE ID TO BRING 'OUT OF SCHOOL' KIDS BACK INTO THE SYSTEM

New Delhi:

HRD ministry has decided to take the help of Unique Identity number project to carry out educational reforms. Among its goal is to use UID to bring 80 lakh 'out of school' children back into the education system. The ministry will ask UID Authority to include educational institutions (school and colleges) in its soon-to-commence pilot project.

The first step would be to provide children with ID numbers - a task that will be outsourced by the ministry to civil society groups. UID Authority has calculated Rs. 200 as the cost per person for providing ID numbers. The ministry will share this cost with civil society groups to get children into schools, the official said. Simultaneously, the ministry is also writing to UID Authority that 220 million children in schools and 26 million in colleges should be given IDs. Once this is done, a child tracking system will be evolved in cooperation with state governments.

HRD sources also said UID would eliminate the possibility of duplication of enrolment in government as well as private schools. Accurate and truthful information about enrolment will be useful in reducing chances of pilferage of scarce resources available for Sarva



Shiksha Abhiyan and Mid-Day Meal scheme.

## CHILDREN Eeking OUT A LIVING FROM WASTE GET HELP

Pune:

In a move likely to provide opportunities of education to numerous child-labourers, a city-based organisation Kagad Kach Patra Kashtakari Panchayat (KKPKP) which works with migrant child waste pickers has joined hands with the Sarva Shiksha Abhiyan to identify and build up a support system for the migrant child waste pickers of Pune.

Over the last few years, the waste pickers' population in Pune has undergone a demographic change with studies suggesting that the children who are waste pickers in Pune do not hail from the city itself. Many of them are migrant children, who come to Pune to earn their livelihood.

"The Sarva Shiksha Abhiyan (SSA) approached us recently — they want us to identify these migrant children and conduct a demographic study so that interventions can be made. We hope to start work by mid January, beginning with the launching of non formal education centres for these children," said Maitreyi Shankar, member of KKPKP. The SSA-KKPKP study will also do a head count on the number of children who are still involved in waste picking, despite the Child Labour Act.

These children end up doing nothing the entire day because of waste picking. All they have to do is pick up a few bottles for which they get anywhere between Rs 10 to Rs 30," she said. "While KKPKP has tried to get scrap dealers to promise that they will not accept scrap from children, little can be done without social pressure," Shankar said.

In studies in 1995, KKPKP found over 600 children involved in waste picking. In 2004, a follow-up study revealed that the numbers had reduced significantly. However, there were around 360 children in the age group of 9-14 involved in waste picking. Some of them were enrolled in schools, but were still picking waste. "A majority of the children were migrants, many of them had come specifically from Malegaon and were sending waste back to Malegaon, where there is a ready market for recycling plastic," said Shankar.

But the studies reinforced the belief that education initiatives targeted at the city waste-picking community was working. Many children of Pune-based adult waste pickers previously in the same profession had gone on to get an education and had taken up other professions over the last decade. Sapna Dixit, a commerce graduate, is a child of a waste picker. "My mother works as a waste picker, but she ensured that none of us got into waste picking. We were all sent to school and educated," she said. Dixit has four brothers and sisters; two of them are employed while the other two are still studying.

## PARENTS CRITICIZE SIBAL'S PRIVATE SCHOOL FEES REMARKS

New Delhi:

Parents' associations condemned Human Resource Development (HRD) Minister Kapil Sibal's comments that private schools would have a free hand in fixing their fees and sought the Prime Minister's intervention in the matter.

"The Right To Education (RTE) Act does not contain any provision authorising the government to regulate fees and other charges in private schools. It is very serious matter that an act may encourage and perpetuate the

commercialization of education," said Vijender Gupta, president of the Delhi Parents Association in a statement.

Addressing the National Progressive Schools Conference (NPSC) here, Sibal was quoted as having said that fees of private schools could not be regulated despite laws and that once the RTE Act comes into effect on April 1, it would override a Delhi law that requires private schools to pay their teachers according to government pay scales.

Ashok Agarwal, president of the All India Parents' Association, also strongly condemned the statement. "The government has not only powers but the duty also to check commercialization of education. What is needed is that either the definition part of capitation fee in RTE Act be repealed or provisions containing regularization of fees to prevent commercialization of education be inserted in to the Act," Agarwal said.

The associations have now jointly demanded that the Prime Minister should intervene and that the act's provisions which give private school managements a free hand in fixing fees should be withdrawn. "The central government should enact a comprehensive national law regulating education in private schools. It should contain a regulatory method to check arbitrary and exorbitant fee hikes," the statement said. They further denounced the minister's statement that after the education law is notified, private schools could fix the salaries of teachers without basing them on government pay scales, which were increased last year as per the Pay Commission's recommendations. ■



# THE SERIOUS MATTER OF ENJOYABLE INSTRUCTION

People fear the trivialisation of their learning - they worry that no one will take them seriously if they make their communication entertaining, observes Aniruddha Sen Gupta.

About a decade ago, I came to that stage in my life that many people do -- wondering what the worth was of what I was doing. I worked at the time in a corporate communications agency, a good one, a maverick one. But what had begun to bother me about it was the ultimate purpose of the skills I had learned. To sell software, or automobiles, or pharmaceuticals, or other such strange dreams? Is that what I was meant to do? It didn't seem right.

So, when I decided, with a close friend and colleague, to strike out on my own, the unwritten charter that we set for ourselves was that we would work only with people who we felt were trying to make a positive change in the world. People who had nothing to sell, only something to give. And so we worked with environmental justice groups, human rights activists, NGOs working on disability, alternative education proponents -- inspiring, enthusiastic, driven people all.

The initial years were a revelation -- it was as if we had discovered a dark continent, a hidden land where the rules were all different from what we had learned. The way people looked at life here was upside-down -- at least, if you believed that the other world was the right way up. Most things were not what we had thought them to be till then. These people even spoke a different language, with terms like 'capacity-building' and 'praxis' which we had no understanding of.

As this mysterious shadowland became less obscure to us, I began to wonder why people from the first world had no clue about this other one. I myself

had been completely unaware of it till I made the switch, and I was a reasonably well-read, aware fellow, I thought. Gradually, parts of the answer became evident to me. On the mainstream side, I realised soon, there were many forces, forces in control of things, for which it made good sense to keep their 'subjects' in the dark. But what about the other side, the seekers of truth, the deep diggers? Why could they not burst forth brandishing their treasure troves of information, revealing to the hordes that there was another side to things, that the dazzling lights of the television and the cosmetic perfectness of the models on the billboards hid ugly blemishes that needed to be seen by everyone.

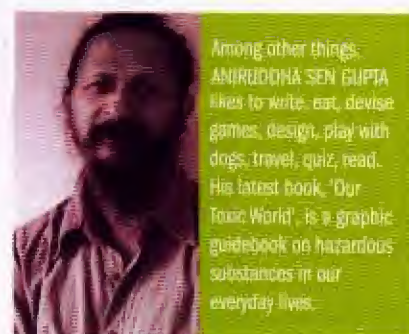
This question I continue to struggle with, but its manifestations I recognise. All this precious information tends to get obscured in the form that the communication from 'out there' takes. Either it gets too academic, or aesthetically indulgent, and loses any potential for mass appeal. In the end, its form ensures that it is of interest only to the kind of person who gains little from it -- the kind of person who is already well-versed in this vocabulary.

My feeling is that the inhabitants of this world fear the trivialisation of their learnings, if it were to be put in a language that everyone has access to. That they worry that no one will take them seriously if they make their communication entertaining.

The way I see it, that's the big challenge before educators and communicators -- to stop worrying about how they will be seen through their work, and start thinking

about how their messages will be received through it. Whether it's children you're addressing or adults, or rural women between 25 and 35, or the bureaucrat who's going to be pushing that file that will make the big difference, you've got to grab their attention, and if you want to make the change you believe in, you do exactly what it takes to make it happen.

The entertainment industry knows how to do that, and there are lessons worth learning from it. We design educational CD-ROMs, taking from the movies the mystery-adventure narratives that keep the kids at the edge of their seats. We conceive of books where characters have disabilities but turn their methods of coping into potent ways to repel villainous schemes. We capitalise on the universal appeal of comics to tell stories about how the earth is affected by our choices, and how our choices are manipulated by the world. And by doing these things, we put one brick after another into that bridge that we need to build. The bridge that will cross the divide, and bring the alternative to the mainstream. And when these two worlds collide, hopefully, something better will emerge. ■



Among other things, ANIRUDDHA SEN GUPTA likes to write, eat, devise games, design, play with dogs, travel, quiz, read. His latest book, 'Our Toxic World', is a graphic guidebook on hazardous substances in our everyday lives.



